Advant® OCS
with Master software

ABB MasterView® 320

User’s Guide

Use of **DANGER**, **WARNING**, **CAUTION**, and **NOTE**

This publication includes, **DANGER**, **WARNING**, **CAUTION**, and **NOTE** information where appropriate to point out safety related or other important information.

DANGER	Hazards which could result in severe personal injury or death
WARNING	Hazards which could result in personal injury
CAUTION	Hazards which could result in equipment or property damage
NOTE	Alerts user to pertinent facts and conditions

Although **DANGER** and **WARNING** hazards are related to personal injury, and **CAUTION** hazards are associated with equipment or property damage, it should be understood that operation of damaged equipment could, under certain operational conditions, result in degraded process performance leading to personal injury or death. Therefore, comply fully with all **DANGER**, **WARNING**, and **CAUTION** notices.

TRADEMARKS

Master, MasterPiece, MasterView, MasterAid, and SuperView are registered trademarks of ABB Asea Brown Boveri Ltd. Switzerland

MasterNet, MasterBus, and MasterBatch are trademarks of ABB Asea Brown Boveri Ltd. Switzerland

Advant, AdvaCommand, AdvaInform, AdvaBuild, AdvaControl, AdvaBatch and AdvaTalk are registered trademarks of ABB Process Automation Corp. USA

NOTICE

The information in this document is subject to change without notice and should not be construed as a commitment by ABB Industrial Systems AB. ABB Industrial Systems AB assumes no responsibility for any errors that may appear in this document.

In no event shall ABB Industrial Systems AB be liable for direct, indirect, special, incidental or consequential damages of any nature or kind arising from the use of this document, nor shall ABB Industrial Systems AB be liable for incidental or consequential damages arising from use of any software or hardware described in this document.

This document and parts thereof must not be reproduced or copied without ABB Industrial Systems AB’s written permission, and the contents thereof must not be imparted to a third party nor be used for any unauthorized purpose.

The software described in this document is furnished under a license and may be used, copied, or disclosed only in accordance with the terms of such license.

Copyright © ABB Industrial Systems AB 1996

3BSE001264/C

TABLE OF CONTENTS

Chapter 1 - Introduction

1.1 General 1-1
1.2 Abbreviations 1-2

Chapter 2 - Working Order

2.1 General 2-1

Chapter 3 - System Description

3.1 Application Software 3-1
3.2 Hardware 3-2
  3.2.1 PM150, Processor Module in Advant Controller 410 3-2
  3.2.2 CI531, RS232 Module 3-2
3.3 System Software 3-3
3.4 Number of Terminals 3-3
  3.4.1 Use of Several Terminals 3-3
  3.4.2 Advant Controller 410 3-4
  3.4.3 Advant Controller 450 3-5
3.5 Number of Displays and Variables 3-6
3.6 Consumption of Memory 3-6
3.7 CPU Load 3-6

Chapter 4 - Installation

4.1 Overview 4-1
4.2 Hardware Advant Controller 410 4-2
4.3 Hardware Advant Controller 450 4-3
4.4 Connection of Terminal 4-5
  4.4.1 Connection Without a Modem 4-5
  4.4.2 Connection with a Short Distance Modem 4-6
  4.4.3 Connection with a Telephone Modem 4-7
4.5 Dimensioning the Data Base 4-8
4.6 DB Elements for Installation, Overview 4-9
4.7 DB element CI531 4-11
4.8 Data Base Element TERM 4-12
4.9 Data Base Element TERMPAR 4-13
4.10 The Terminal 4-14
4.11 Start 4-14
  4.11.1 Start after Configuration in Configuration Mode 4-14
  4.11.2 Configuration in Operation Mode, (“online”) 4-14

CONTENTS (continued)

4.12 Changes in the Installation 4-15
  4.12.1 Changing of Parameters in Operation Mode (“online”) 4-15
  4.12.2 Exchanging of CI531 4-15
  4.12.3 Delayed Start Up of CI531 4-15
  4.12.4 Changing Positions of the CI531 4-16

Chapter 5 - Creating Displays

5.1 General 5-1
5.2 Defining Static Texts 5-4
5.3 Defining Dynamic Variables 5-8
  5.3.1 Boolean Variables 5-13
  5.3.2 Integer Variables 5-14
  5.3.3 Real Variables 5-16
5.4 End Generation 5-17

Chapter 6 - Modifying And Deleting Displays

6.1 General 6-1
6.2 Modifying Static Texts 6-3
6.3 Modifying Dynamic Variables 6-3

Chapter 7 - Event Handling

7.1 General 7-1

Chapter 8 - Operation

8.1 General 8-1
8.2 Selecting Displays 8-2
8.3 Modifying Dynamic Variables 8-5
8.4 Printing a Display 8-8
8.5 Changing Date and Time 8-9
8.6 Displaying the Event List 8-12
8.7 Restarting the MasterView 320 8-16
8.8 Restart after Communication Interruption 8-17

Chapter 9 - Relevant Data Base Elements

9.1 TERM 9-1
9.2 TERMPAR 9-2
9.3 TERMGEN 9-3
9.4 TERMDIS 9-3
9.5 TERMDYN 9-3
9.6 TERMREF 9-3

CONTENTS (continued)

9.7 TERMSTR 9-3
9.8 CI531 9-4
9.9 Source Code Handling 9-4
  9.9.1 Dumping the Complete MV 320 Application 9-4
  9.9.2 Dumping a Single MasterView 320 Display 9-5

Chapter 10 - Connection to PC

10.1 Changing Displays 10-1
10.2 Input from the Keyboard 10-1
10.3 Printing Displays 10-1
10.4 Changing Presentation Type 10-1
10.5 Changing “Generate Permission” 10-1
10.6 Connecting DAT Elements 10-1
10.7 Using the Character Data Type 10-1
10.8 Printer Instead of Terminal 10-1
10.9 Examples of PC Programs 10-1
  10.9.1 Changing Displays 10-1
  10.9.2 Changing “Generate Permission” 10-1
  10.9.3 Changing Presentation Type 10-1
  10.9.4 Changing Min and Max Values 10-1
  10.9.5 Printing a Single Display 10-1
  10.9.6 Printing Several Displays 10-1

Chapter 11 - Troubleshooting

11.1 Error Messages 11-1
  11.1.1 Operator's Dialog 11-1
  11.1.2 Incorrect Database 11-1
  11.1.3 The MasterView 320 is Shut Down and Restarted 11-3
11.2 If The MasterView 320 does Not Start Up 11-4
11.3 If The Function Keys do Not Work 11-4
11.4 If it is Impossible to Add Text 11-5
11.5 The Events do Not Reach The MasterView 320 11-7
11.6 Repairing Destroyed Displays 11-9
  11.6.1 Repairing Destroyed Displays, Method 1 11-9
  11.6.2 Repairing Destroyed Displays, Method 2 11-10
11.7 DUDB-LODB Dump 11-10

Chapter 1 Introduction

1.1 General

The MasterView 320 is a simple local operator station, directly connected to the Advant Controller 410/ 450 (the Controller). It is not connected to any network (MasterBus 300). Advant Controller 410 supports up to three MasterView 320 stations, Advant Controller 450 supports up to four MasterView 320 stations.

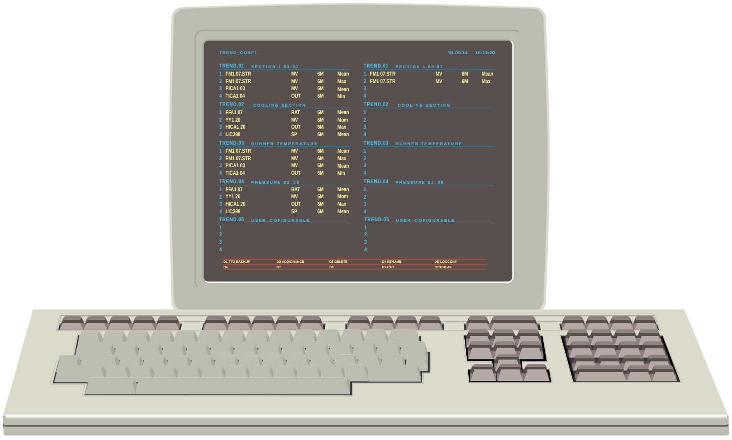


Figure 1-1. MasterView 320

On each MasterView 320 terminal it is possible to create and display simple process pictures. Each display can contain static texts and dynamic variables

A dynamic variable is used to display the value of a variable within the database of the controller. Boolean, integer or real variables may be displayed. Integer variables may be displayed in integer, character or time format.

Control of the terminal is achieved using the four function keys: F1(PF1), F2(PF2), F3(PF3), F4(PF4); plus the cursor positioning keys:

Additional information, for creating pictures and modifying values, is input using the standard keyboard.

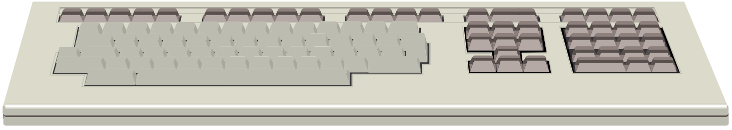


Figure 1-2. Standard keyboard, layout

1.2 Abbreviations

The following product name abbreviations are used in this manual.

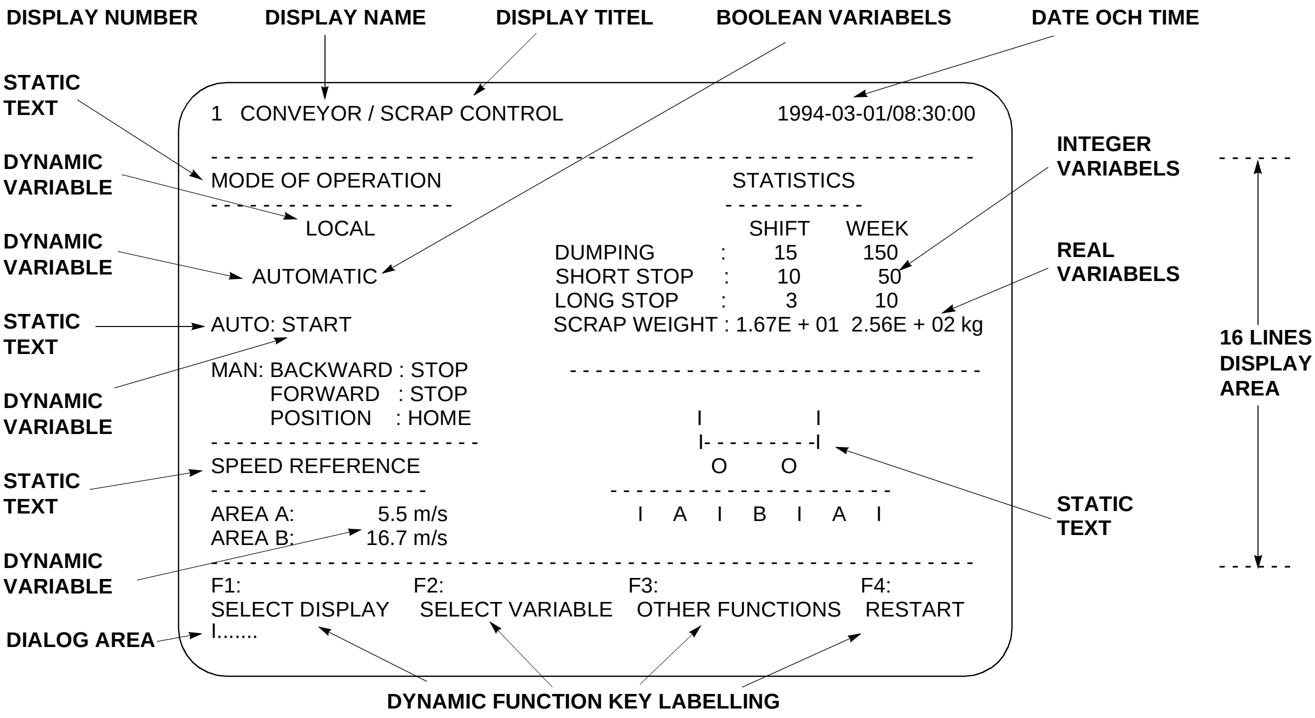
Table 1-1. Abbreviations

Abbreviation	Specification
MV 320	MasterView 320
AC 410	Advant Controller 410
AC 450	Advant Controller 450
AC 400Series	Advant Controller 400 Series, i.e. Advant Controller 410 and Advant Controller 450
AS 500 OS	Advant Station 500 Series Operator Station
MV 800	MasterView 800,i.e. MasterView 850/1, MasterView 830 and MasterView 810
AS 100 ES	Advant Station 100 Series Engineering Station
Controller	Advant Controller 410/450

Chapter 2 Working Order

2.1 General

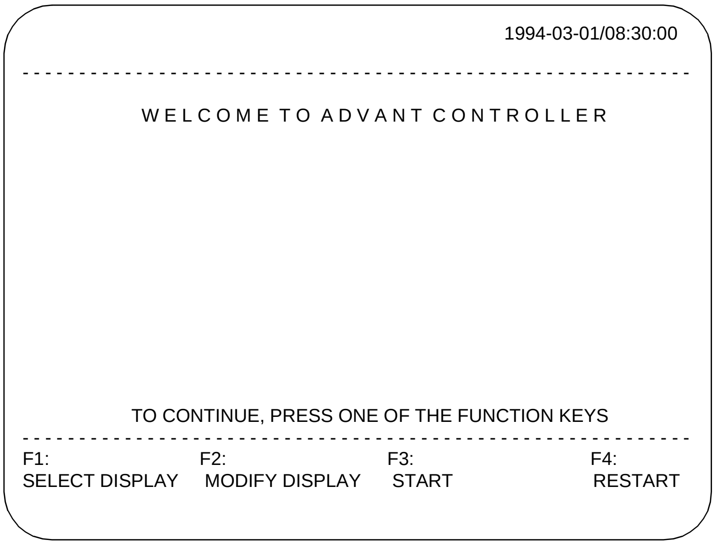
Below is an example of a simple process picture which can be created and displayed on the MasterView 320.



```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                    STATISTICS
- - - - - - - - - - - - - - -                       - - - - - - - - -
        LOCAL                                           SHIFT      WEEK
                                  DUMPING         :      15         150
    AUTOMATIC                     SHORT STOP      :      10          50
                                  LONG STOP       :       3          10
AUTO: START                       SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP              - - - - - - - - - - - - - - - - - - - - - -
     FORWARD  : STOP
     POSITION : HOME                         I              I
- - - - - - - - - - - - - - - - -            I- - - - - - - -I
SPEED REFERENCE                                 O       O
- - - - - - - - - - - - - -               - - - - - - - - - - - - - - - - -
AREA A:          5.5 m/s                    I   A   I   B   I   A   I
AREA B:         16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                 F2:                 F3:                   F4:
SELECT DISPLAY      SELECT VARIABLE     OTHER FUNCTIONS       RESTART
I.......
```

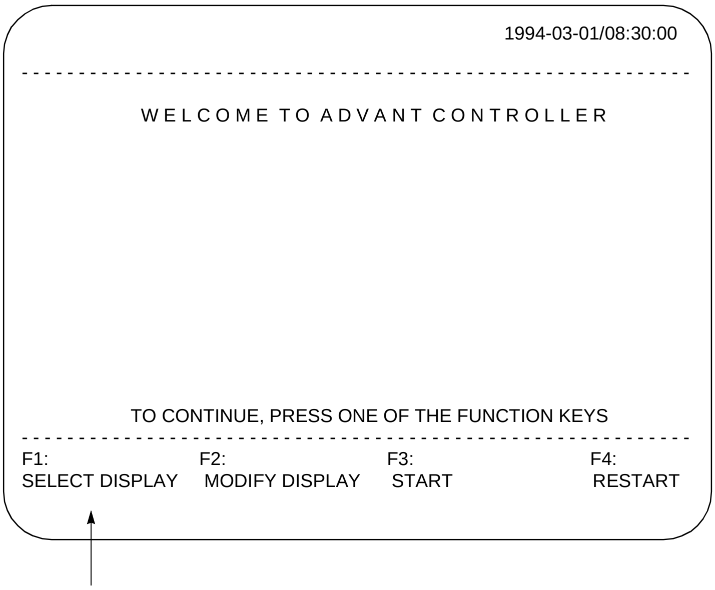
Figure 2-1. Example of a simple process picture

The MasterView 320 is ready for use when the message: "WELCOME TO ADVANT CONTROLLER" appears on the screen. Detailed description in Chapter 4 Installation.



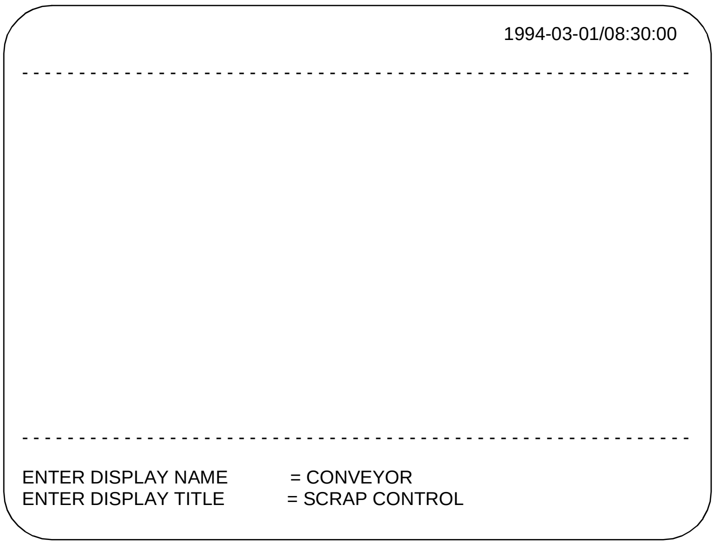
```
                                                  1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
               W E L C O M E  T O  A D V A N T  C O N T R O L L E R




               TO CONTINUE, PRESS ONE OF THE FUNCTION KEYS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:               F2:                F3:                   F4:
SELECT DISPLAY    MODIFY DISPLAY     START                 RESTART
```

Creating display.
To create a display, press function key F1. Detailed description in Chapter 5 Creating Displays



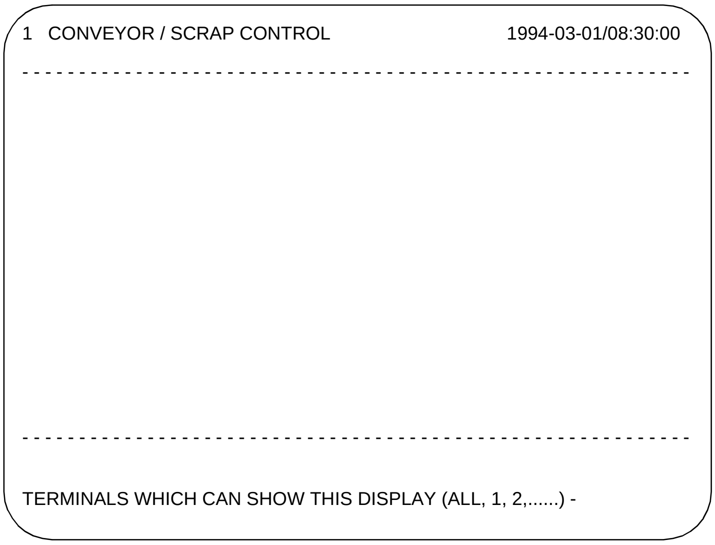
```
                                                  1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
               W E L C O M E  T O  A D V A N T  C O N T R O L L E R




               TO CONTINUE, PRESS ONE OF THE FUNCTION KEYS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:               F2:                F3:                   F4:
SELECT DISPLAY    MODIFY DISPLAY     START                 RESTART
```

A series of questions follows, which allows a name and title to be defined for the new display. Detailed description in Chapter 5 Creating Displays.



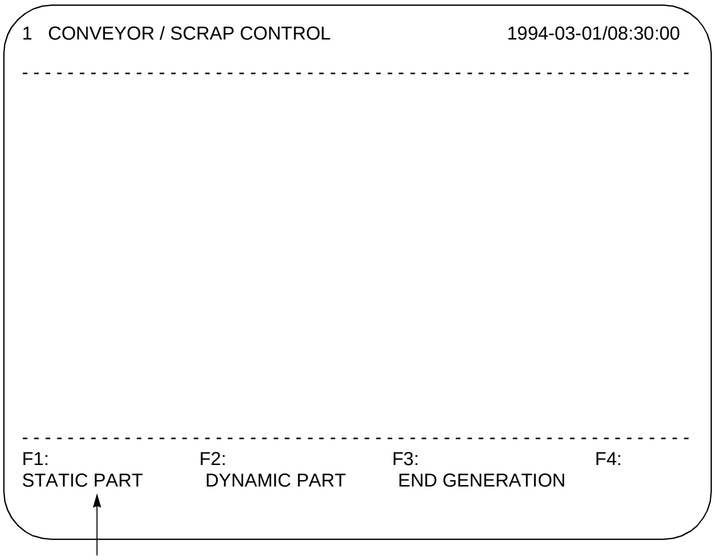
```
                                                        1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
ENTER DISPLAY NAME          = CONVEYOR
ENTER DISPLAY TITLE         = SCRAP CONTROL
```

Define which terminals can show this display. Detailed description in Chapter 5 Creating Displays.



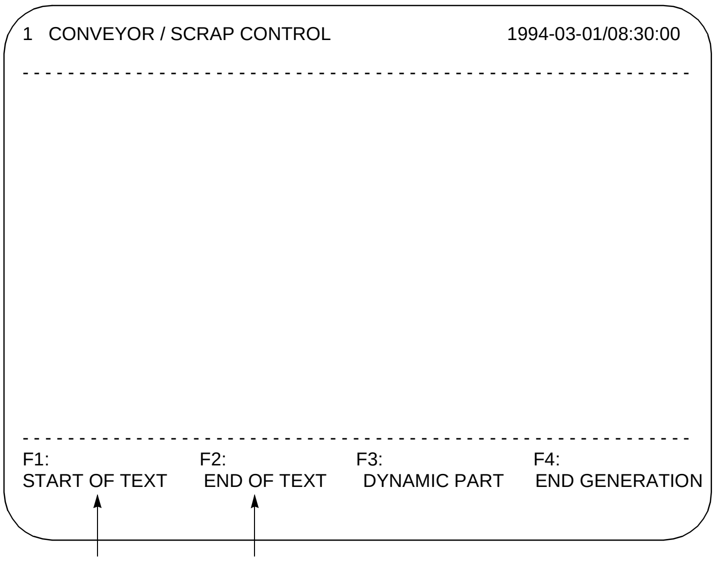
```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

TERMINALS WHICH CAN SHOW THIS DISPLAY (ALL, 1, 2,......) -
```

Creating a display - Static Part.
To define one or more static texts, press function key F1. Detailed description in Section 5.2 Defining Static Texts.



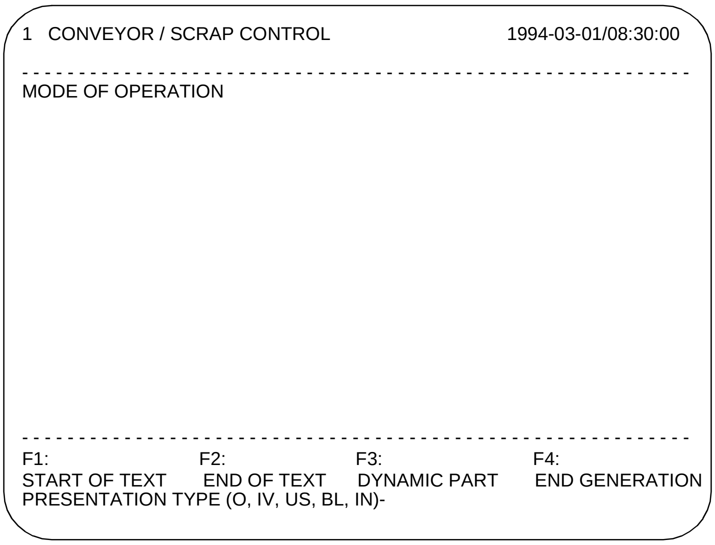
```
1   CONVEYOR / SCRAP CONTROL                    1994-03-01/08:30:00
-----------------------------------------------------------------





-----------------------------------------------------------------
F1:                 F2:                  F3:                    F4:
STATIC PART          DYNAMIC PART         END GENERATION
```

A new set of function key options is displayed. Static texts can be defined using function keys F1 and F2. Detailed description in Section 5.2 Defining Static Texts.



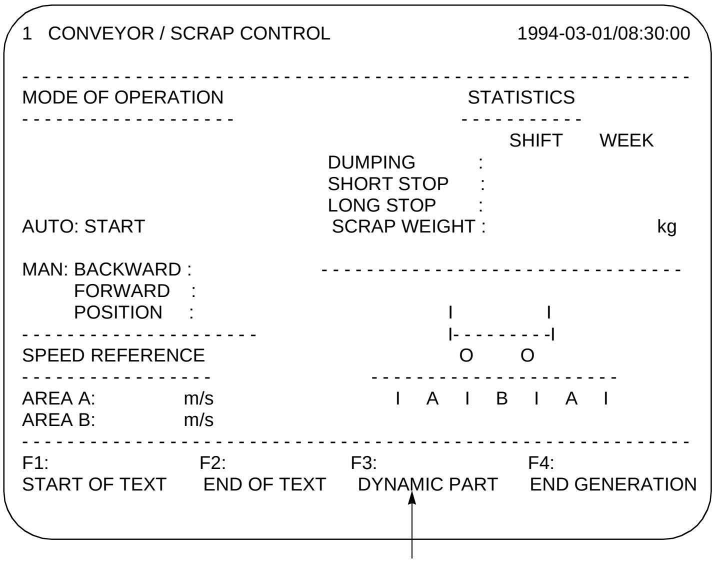
```
1   CONVEYOR / SCRAP CONTROL                    1994-03-01/08:30:00
-----------------------------------------------------------------





-----------------------------------------------------------------
F1:                 F2:               F3:                F4:
START OF TEXT        END OF TEXT       DYNAMIC PART       END GENERATION
```

When each text is input, its presentation type can be defined. Detailed description in Section 5.2 Defining Static Texts.



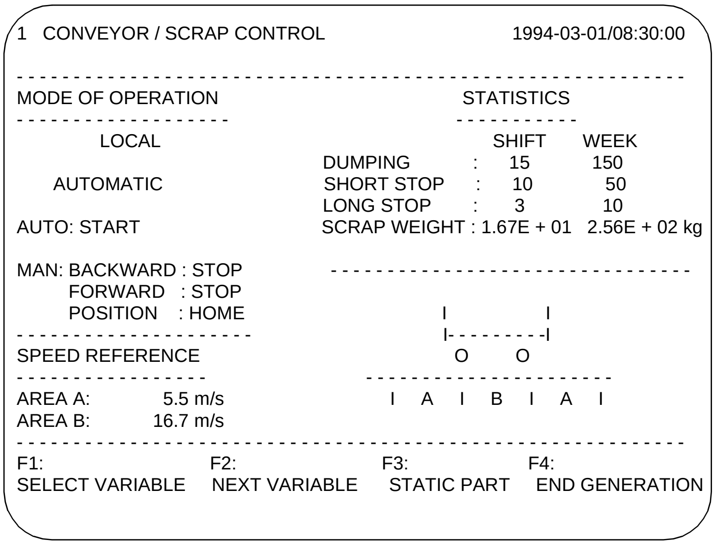
```
1   CONVEYOR / SCRAP CONTROL                         1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION













- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                   F2:                F3:                   F4:
START OF TEXT       END OF TEXT      DYNAMIC PART       END GENERATION
PRESENTATION TYPE (O, IV, US, BL, IN)-
```

To define dynamic variables, press function key F3. Detailed description in Section 5.3 Defining Dynamic Variables.



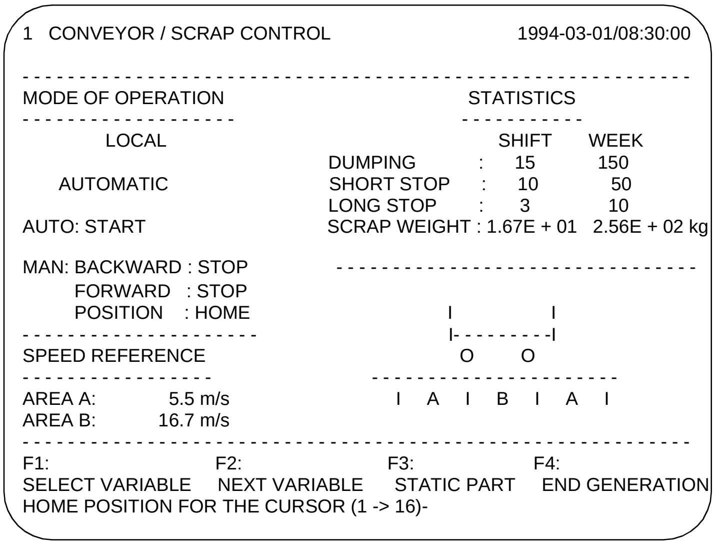
```
1   CONVEYOR / SCRAP CONTROL                         1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                      STATISTICS
- - - - - - - - - - - - - - - - - -                    - - - - - - - - - - -
                                                            SHIFT      WEEK
                                      DUMPING         :
                                      SHORT STOP      :
                                      LONG STOP       :
AUTO: START                            SCRAP WEIGHT :                         kg

MAN: BACKWARD :                      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        FORWARD    :
        POSITION    :                                 I                I
- - - - - - - - - - - - - - - - - - - - -                  I- - - - - - - - - -I
SPEED REFERENCE                                         O        O
- - - - - - - - - - - - - - - - -                  - - - - - - - - - - - - - - - - - - - - - -
AREA A:              m/s                         I    A    I    B    I    A    I
AREA B:              m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                   F2:                F3:                   F4:
START OF TEXT       END OF TEXT      DYNAMIC PART       END GENERATION
```

A new set of function key options is displayed. Dynamic variables can be defined using function keys F1 and F2. The Static Part can be entered by pressing function key F3. When the display is complete, press function key F4. Detailed description in Section 5.3 Defining Dynamic Variables.



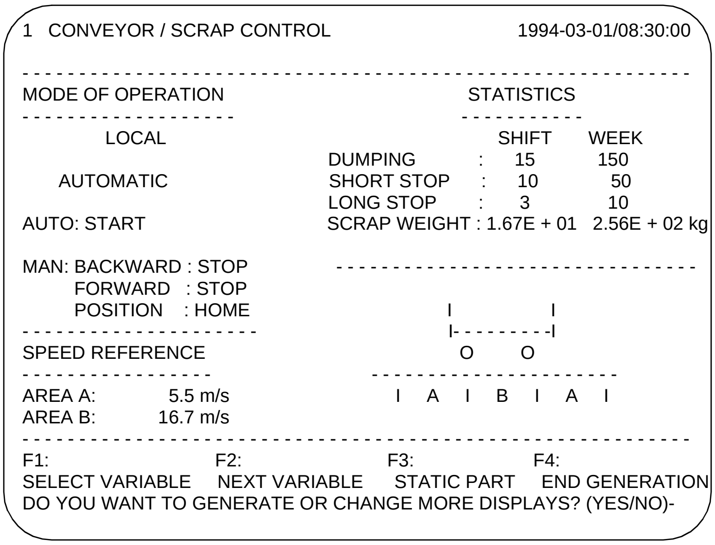
```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                 STATISTICS
- - - - - - - - - - - - - - - - - -               - - - - - - - - - - -
        LOCAL                                        SHIFT     WEEK
                                DUMPING       :      15         150
     AUTOMATIC                  SHORT STOP    :      10          50
                                LONG STOP     :       3          10
AUTO: START                     SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP             - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD   : STOP
     POSITION    : HOME                    I            I
- - - - - - - - - - - - - - - - - - - -              I- - - - - - - - - -I
SPEED REFERENCE                              O      O
- - - - - - - - - - - - - - - - -           - - - - - - - - - - - - - - - - - - - - - -
AREA A:          5.5 m/s                I   A   I   B   I   A   I
AREA B:         16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                 F2:                F3:             F4:
SELECT VARIABLE     NEXT VARIABLE      STATIC PART     END GENERATION
```

Define the home cursor position. Detailed description in Section 5.4 End Generation.



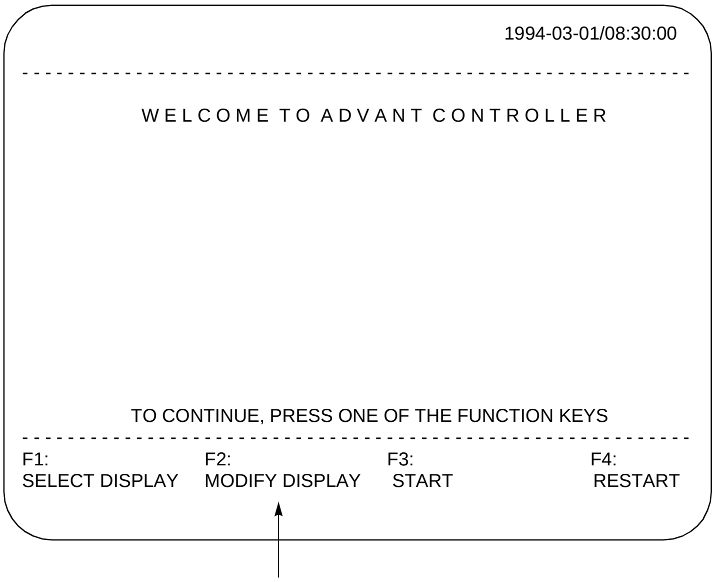
```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                 STATISTICS
- - - - - - - - - - - - - - - - - -               - - - - - - - - - - -
        LOCAL                                        SHIFT     WEEK
                                DUMPING       :      15         150
     AUTOMATIC                  SHORT STOP    :      10          50
                                LONG STOP     :       3          10
AUTO: START                     SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP             - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD   : STOP
     POSITION    : HOME                    I            I
- - - - - - - - - - - - - - - - - - - -              I- - - - - - - - - -I
SPEED REFERENCE                              O      O
- - - - - - - - - - - - - - - - -           - - - - - - - - - - - - - - - - - - - - - -
AREA A:          5.5 m/s                I   A   I   B   I   A   I
AREA B:         16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                 F2:                F3:             F4:
SELECT VARIABLE     NEXT VARIABLE      STATIC PART     END GENERATION
HOME POSITION FOR THE CURSOR (1 -> 16)-
```

Decide if more displays are to be created or modified. When the question is answered, the message "WELCOME TO ADVANT CONTROLLER" reappears on the screen. Detailed description in Section 5.4 End Generation



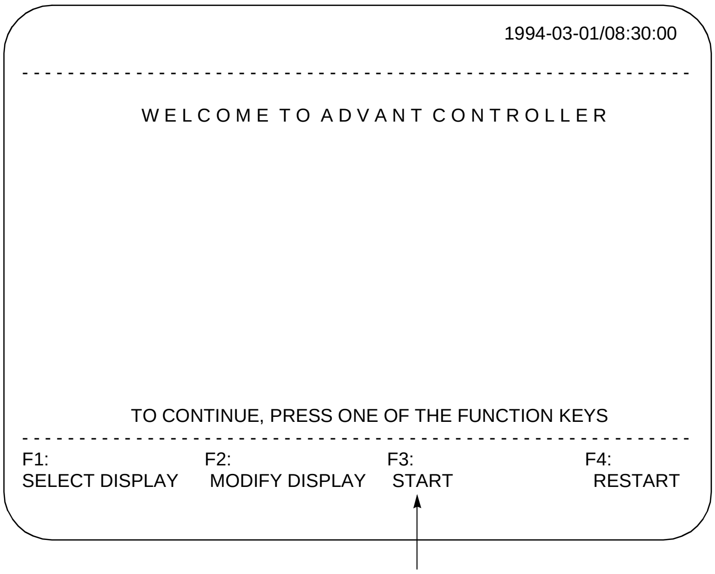
```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                    STATISTICS
- - - - - - - - - - - - - - - - - -                  - - - - - - - - - - -
         LOCAL                                             SHIFT      WEEK
                                  DUMPING         :     15          150
    AUTOMATIC                     SHORT STOP     :     10            50
                                  LONG STOP       :      3            10
AUTO: START                       SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP               - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        FORWARD   : STOP
        POSITION    : HOME                           I                 I
- - - - - - - - - - - - - - - - - - - -              I- - - - - - - - -I
SPEED REFERENCE                                        O        O
- - - - - - - - - - - - - - - - -                - - - - - - - - - - - - - - - - - - - - - -
AREA A:             5.5 m/s                       I    A    I    B    I    A    I
AREA B:           16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                        F2:                      F3:                  F4:
SELECT VARIABLE     NEXT VARIABLE      STATIC PART     END GENERATION
DO YOU WANT TO GENERATE OR CHANGE MORE DISPLAYS? (YES/NO)-
```

Modifying a display.
To modify a display, press function key F2. The method for modifying a display is similar to that for creating a display. Detailed description in Chapter 6 Modifying And Deleting Displays



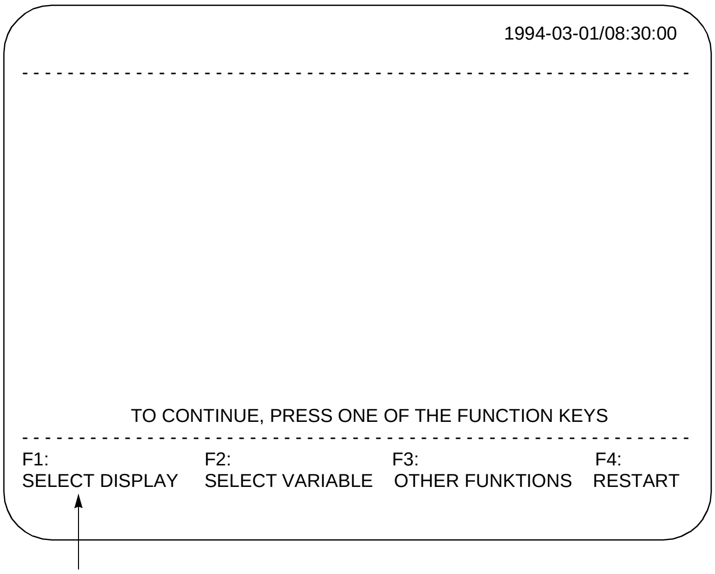
```
                                                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

                      WELCOME TO ADVANT CONTROLLER









                  TO CONTINUE, PRESS ONE OF THE FUNCTION KEYS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                      F2:                        F3:                          F4:
SELECT DISPLAY     MODIFY DISPLAY      START                         RESTART
```

Operating the MasterView 320 - selecting a display.
In order to output a display on the MasterView 320, first press function key F3. Detailed description in Chapter 8 Operation.



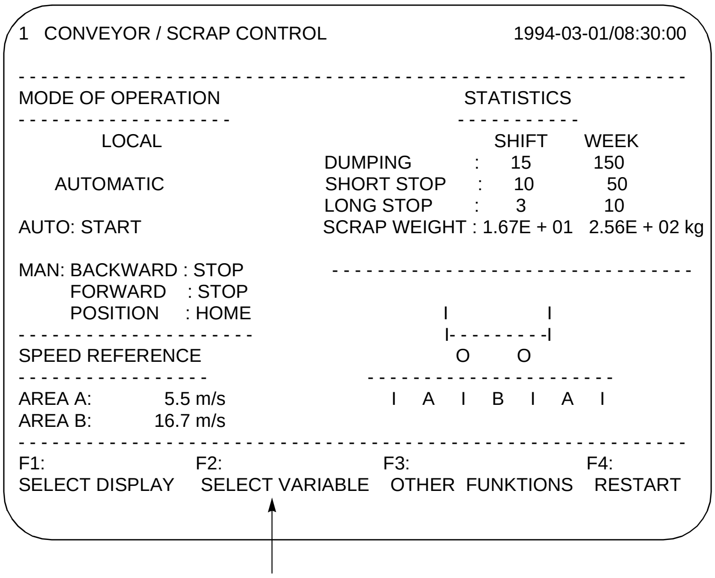
```
                                                    1994-03-01/08:30:00
-------------------------------------------------------------------------
                     WELCOME TO ADVANT CONTROLLER




                TO CONTINUE, PRESS ONE OF THE FUNCTION KEYS
-------------------------------------------------------------------------
F1:               F2:                F3:                  F4:
SELECT DISPLAY     MODIFY DISPLAY     START                 RESTART
```

A new set of function key options is displayed. To select a display for output to the screen, press function key F1. Detailed description in Section 8.2 Selecting Displays.



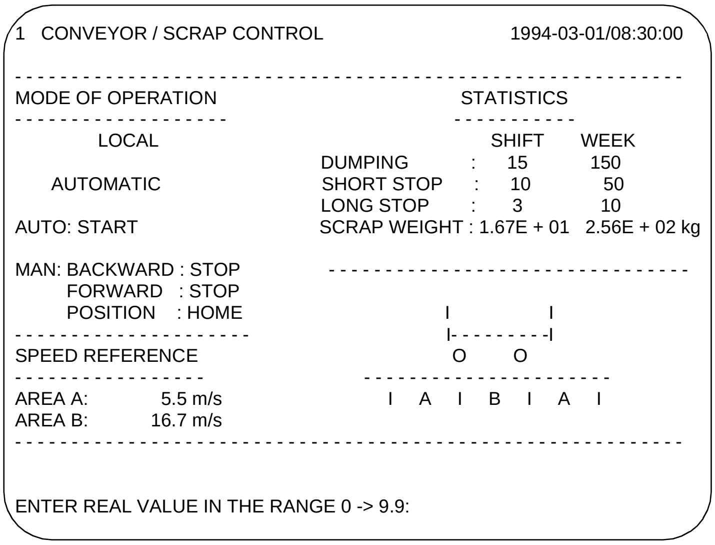
```
                                                    1994-03-01/08:30:00
-------------------------------------------------------------------------




                TO CONTINUE, PRESS ONE OF THE FUNCTION KEYS
-------------------------------------------------------------------------
F1:               F2:                 F3:                  F4:
SELECT DISPLAY    SELECT VARIABLE     OTHER FUNKTIONS      RESTART
```

Operating the MasterView 320 - Modifying a dynamic variable.
If there is a display on the screen and a dynamic variable is to be modified, press function key F2. Detailed description in Section 8.3 Modifying Dynamic Variables



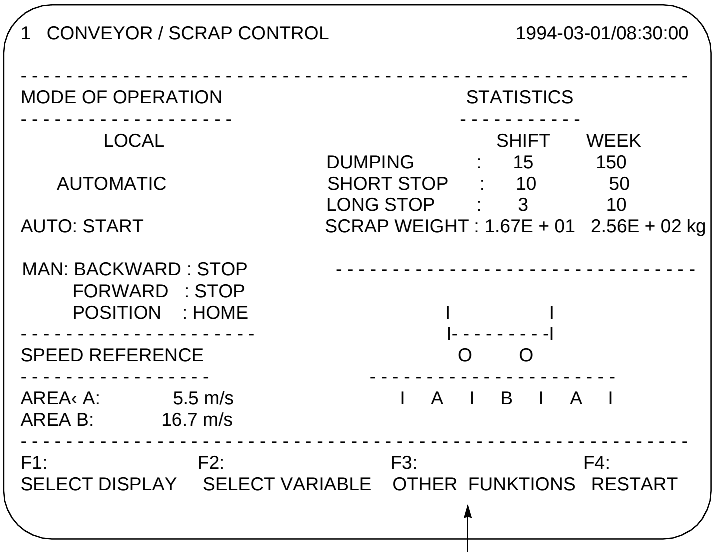
```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                     STATISTICS
- - - - - - - - - - - - - - - - - -                  - - - - - - - - - - -
          LOCAL                                          SHIFT      WEEK
                                     DUMPING         :     15          150
     AUTOMATIC                       SHORT STOP      :     10           50
                                     LONG STOP       :      3           10
AUTO: START                          SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP                  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       FORWARD    : STOP
       POSITION    : HOME                           I              I
- - - - - - - - - - - - - - - - - - - -             I- - - - - - - - -I
SPEED REFERENCE                                       O       O
- - - - - - - - - - - - - - - - -                - - - - - - - - - - - - - - - - - - - - - -
AREA A:            5.5 m/s                          I    A    I    B    I    A    I
AREA B:           16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                     F2:                        F3:                      F4:
SELECT DISPLAY     SELECT VARIABLE    OTHER  FUNKTIONS    RESTART
```

A new value for the variable can then be input. Detailed description in Section 8.3 Modifying Dynamic Variables.



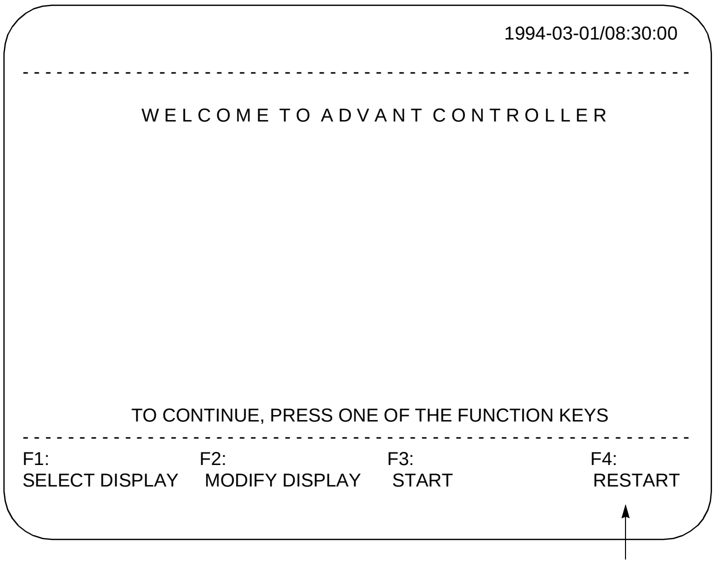
```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                     STATISTICS
- - - - - - - - - - - - - - - - - -                  - - - - - - - - - - -
          LOCAL                                          SHIFT      WEEK
                                     DUMPING         :     15          150
     AUTOMATIC                       SHORT STOP      :     10           50
                                     LONG STOP       :      3           10
AUTO: START                          SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP                  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       FORWARD    : STOP
       POSITION    : HOME                           I              I
- - - - - - - - - - - - - - - - - - - -             I- - - - - - - - -I
SPEED REFERENCE                                       O       O
- - - - - - - - - - - - - - - - -                - - - - - - - - - - - - - - - - - - - - - -
AREA A:            5.5 m/s                          I    A    I    B    I    A    I
AREA B:           16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


ENTER REAL VALUE IN THE RANGE 0 -> 9.9:
```

Changing date and time.
Displaying the event list. Detailed description on Section 8.6 Displaying the Event List.



```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                          STATISTICS
- - - - - - - - - - - - - - - - - - -                     - - - - - - - - - - -
           LOCAL                                                SHIFT      WEEK
                                  DUMPING          :     15          150
      AUTOMATIC                   SHORT STOP       :     10           50
                                  LONG STOP        :      3           10
AUTO: START                       SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP              - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
      FORWARD   : STOP
      POSITION    : HOME                       I               I
- - - - - - - - - - - - - - - - - - - -        I- - - - - - - - -I
SPEED REFERENCE                                  O        O
- - - - - - - - - - - - - - - - -           - - - - - - - - - - - - - - - - - - - - - -
AREA‹ A:            5.5 m/s                   I    A    I    B    I    A    I
AREA B:            16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                F2:                  F3:                      F4:
SELECT DISPLAY     SELECT VARIABLE     OTHER  FUNKTIONS   RESTART
```

How the "RESTART" function key is used. Detailed description in Section 8.7 Restarting the MasterView 320.



```
                                                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
              W E L C O M E  T O  A D V A N T  C O N T R O L L E R







              TO CONTINUE, PRESS ONE OF THE FUNCTION KEYS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                F2:                  F3:                      F4:
SELECT DISPLAY     MODIFY DISPLAY      START                     RESTART
```

Description of data base elements which are relevant to the MasterView 320. Detailed description in Chapter 9 Relevant Data Base Elements. Description of how the MasterView 320 can be controlled by a PC program. Detailed description in Chapter 10 Connection to PC.

Chapter 3 System Description

3.1 Application Software

The MasterView 320 interfaces with PC programs via elements in the data base such as DAT, TERMGEN, TERMPAR, TERMDYN and TERMSTR.

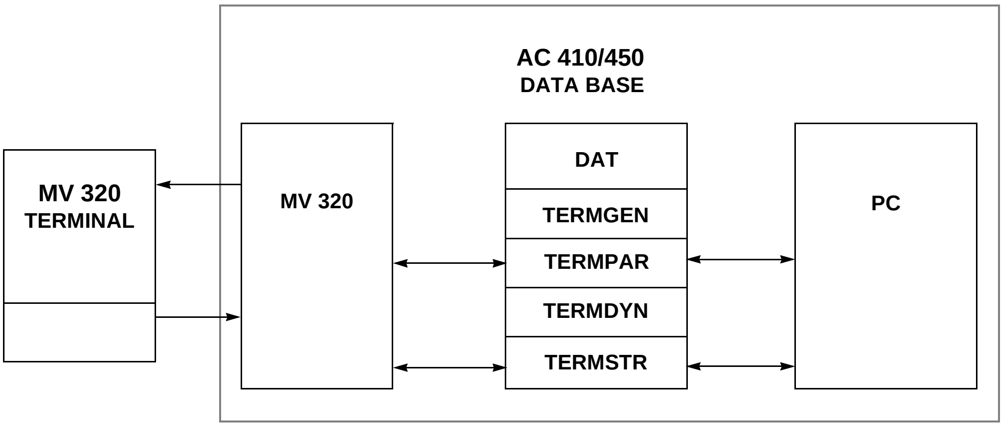


Figure 3-1. MasterView 320 in Advant Controller 410/ 450

The MasterView 320 uses these and other data base elements to store all information about each display. When a set of displays have been created on the MasterView 320, they can be saved and transported (as a set) to other Advant Controller systems using the commands DUDBS and TRDBS on the Advant Station 100 Series Engineering Station. See the manual "ABB Master Source Code Handling" for more information on these commands.

3.2 Hardware

3.2.1 PM150, Processor Module in Advant Controller 410

Connect MasterView 320 terminal 1 to connector COM1 on the processor module PM150.

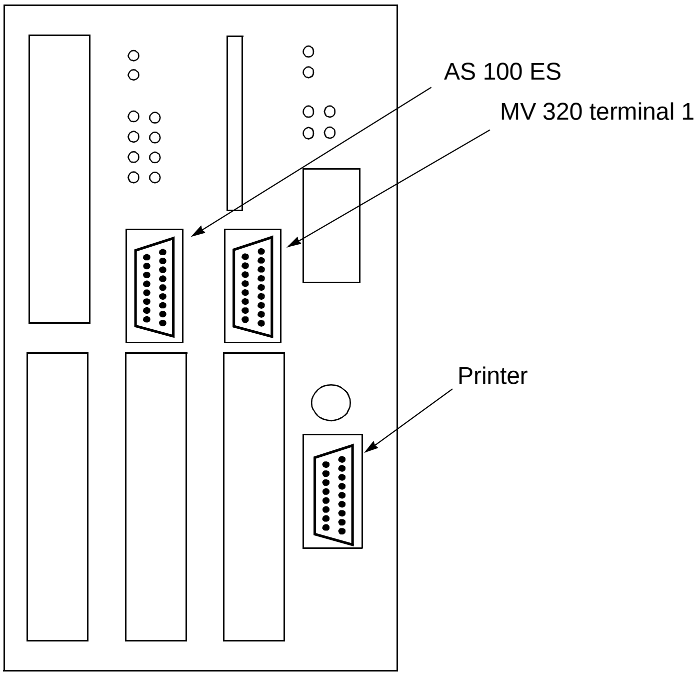


Figure 3-2. PM 150 Processor module

3.2.2 CI531, RS232 Module

The RS232 module can be used in both Advant Controller 410 and Advant Controller 450. CI531 is a general RS232 module, i.e. you can use it for MasterView 320, Excom and a printer.

CI531 has two channels, you can configure each channel to be:

- For Advant Controller 410:

  MasterView 320 terminal 2 or terminal 3.

  Excom link 1 or 2.

- For Advant Controller 450:

  MasterView 320 terminal 1, 2, 3, or 4.

  Excom link 1 or 2.

  Printer.

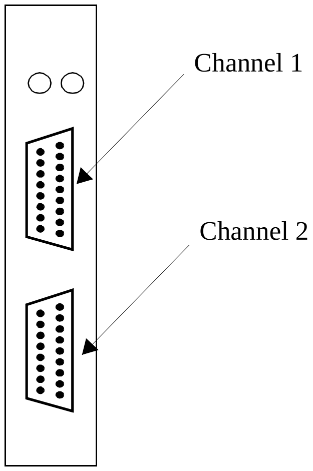


Figure 3-3. CI531 RS232 Module

3.3 System Software

The MasterView 320 function is available only if the system software of the Controller contains the option:

- QC01-LOS11 for Advant Controller 410
- QC02-LOS21 for Advant Controller 450.

3.4 Number of Terminals

3.4.1 Use of Several Terminals

You can connect several terminals to the same Controller. There are in all 59 displays. You can define each display to be displayed on either:

- all of the terminals

  or

- a subset of the terminals.

Each terminal has its own event list. You can define each event to be sent to either:

- all of the terminals

  or

- a subset of the terminals.

3.4.2 Advant Controller 410

The Advant Controller 410 supports up to three MasterView 320 terminals. The capacities for the RS232 functions are as follows:

Table 3-1. Advant Controller 410, the capacities for the RS232 functions

Hardware Module	Number	Capacity
PM 150	1	Printer MasterView 320 terminal1
CI531	2	MasterView 320 terminal 2 MasterView 320 terminal 3 Excom link 1 Excom link 2

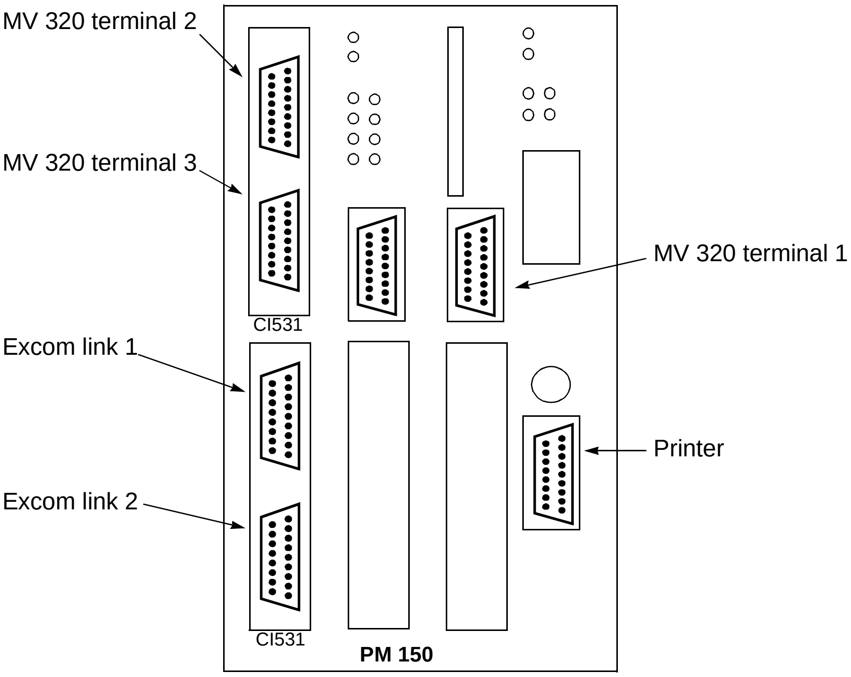


Figure 3-4. Advant Controller 410, overview of the RS232 functions

3.4.3 Advant Controller 450

The Advant Controller 450 supports up to four MasterView 320 terminals. The capacities for the RS232 functions are as follows:

Table 3-2. Advant Controller 450, the capacities for the RS232 functions

Hardware Module	Number	Capacity
CL531	4	MasterView 320 terminal1 MasterView320 terminal 2 MasterView 320 terminal 3 MasterView 320 terminal 4 Excom link 1 Excom link 2 Printer

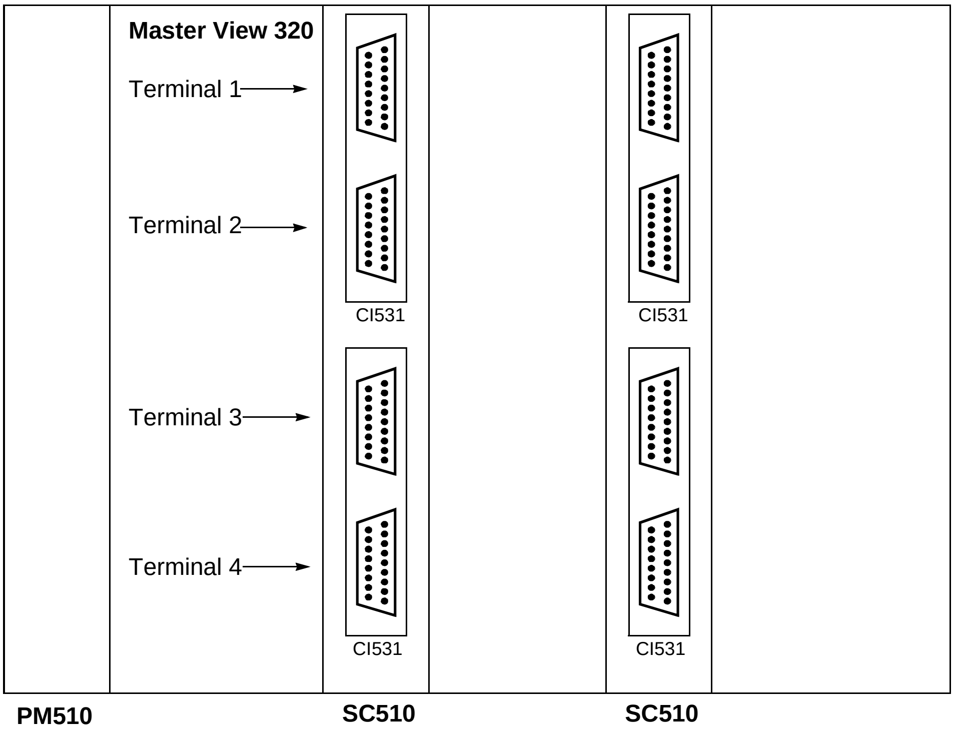


Figure 3-5. Advant Controller 450, overview of the RS232 functions

3.5 Number of Displays and Variables

The capacities for displays are as follows:

Table 3-3. The capacity for MasterView 320 displays

Data	Value
Maximum number of displays in system	59
Maximum number of dynamic variables per display	48
Maximum number of dynamic variables in system	2700
Number of lines in each display	16
Maximum number of static texts per display	50
Maximum number of characters per static text	20
Maximum number of characters in boolean string	12
Maximum number of boolean strings	20

3.6 Consumption of Memory

MasterView 320 consumes memory according to the following formula:

RWM space (kbyte) $= A + (2_{1)} \times B) + (9_{2)} \times C) + 15$

where: A=Size of system software option, AC 410: QC01LOS11=220(kb)
AC 450: QC02-LOS21=220 (kb)

B=Number of displays.

C=Number of MasterView 320 terminals using the Event List function.

$_{1)}$ Presupposes 40 text strings each with 20 characters and 30 dynamic variables.

$_{2)}$ Presupposes an event list capable of recording 100 events.

3.7 CPU Load

Each MasterView 320 terminal causes CPU load according to the following table. The values are reached when a display including 48 dynamic real variables is displayed.

Table 3-4. CPU load

Controller	CPU Load (%)
AC 410	Terminal 1: 5% Terminal2,3: 10%
AC 450	5%

Chapter 4 Installation

4.1 Overview

To install the MasterView 320, proceed as follows (the steps are described in the following chapters):

1. Install the hardware in the subrack
2. Connect the terminal, with or without a modem
3. Dimension the data base
4. Configure the DB elements CI531[1], TERM, TERMPAR
5. Set the communication parameters of the terminal according to the DB element TERM
6. Start up. When the MasterView 320 is started, a display, showing the text "Welcome to Advant Controller”, is displayed.

---

[1] Terminal 1 in Advant Controller 410 does not use the hardware CI531, and therefore neither the DB element CI531. Terminal 1 in Advant Controller 410 is connected to connector COM2 on PM150.

4.2 Hardware Advant Controller 410

Connect terminal 1 to connector 1 on the processor module PM150. Connect terminal 2 and 3 to the RS232 module CI531. CI531 is placed in some of the sub module positions in the processor module PM150. For terminals 2 and 3, you can choose:

- which of the tow channels in the CI531 you want to use
- in which sub module position you want to place the CI531
- which CI531 you want to use (if there are more than one).

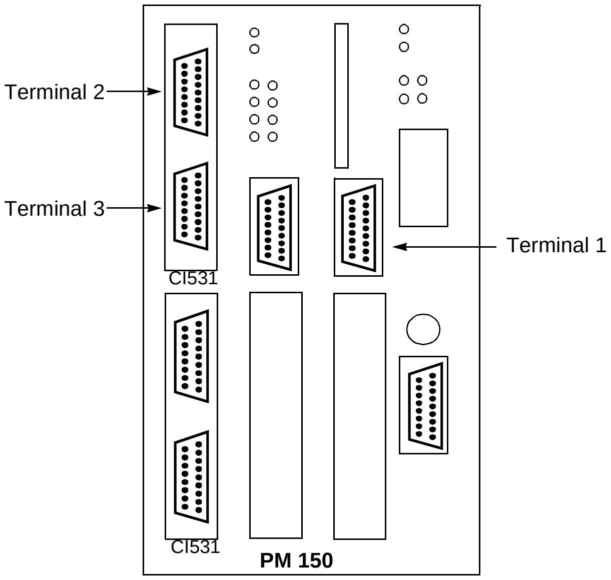


Figure 4-1. Advant Controller 410, overview

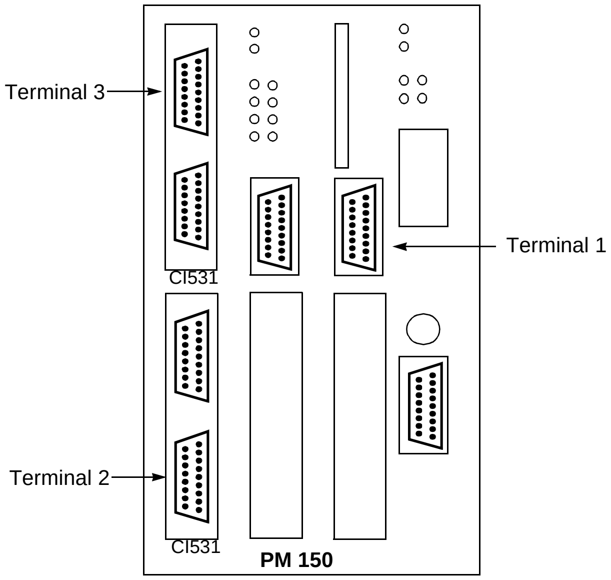


Figure 4-2. Advant Controller 410, overview

4.3 Hardware Advant Controller 450

Connect the terminal to the RS232 module CI531. CI531 is placed in a sub module carrier.

For each terminal you can choose:

- which of the two channels in the CI531 you want to use
- where to place the CI531, i.e:
  - in which position you want to place the sub module carrier
  - in which sub module position in the sub module carrier you want to place the CI531
- which CI531 you want to use (if there are more than one)
- the type of sub module carrier; SC 510, SC 520, or SC 530 (you are allowed to mix them).

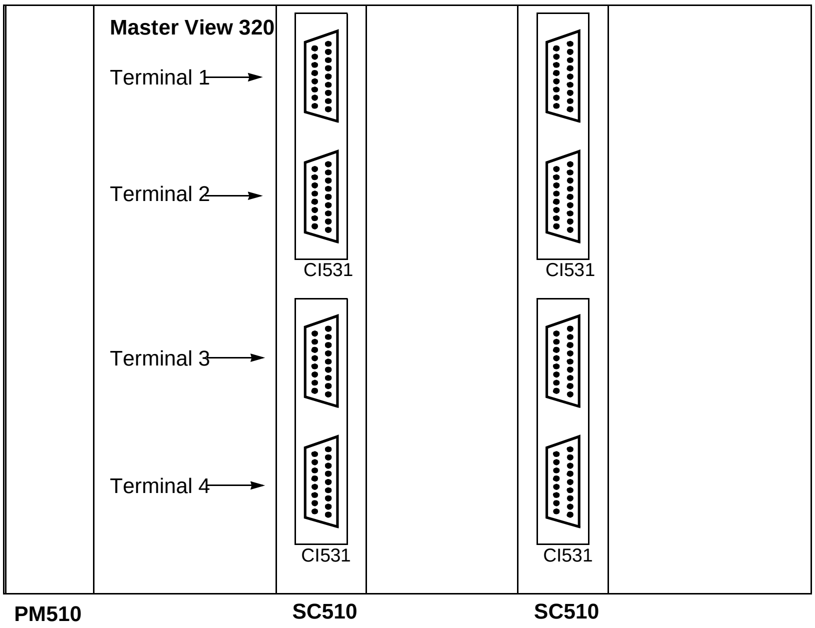


Figure 4-3. Advant Controller 450 hardware, overview

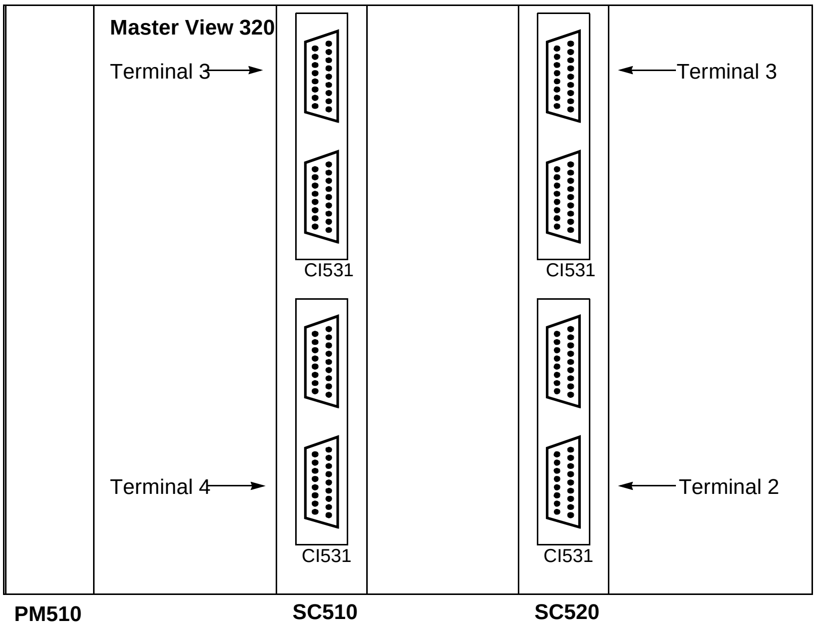


Figure 4-4. Advant Controller 450 hardware, overview

4.4 Connection of Terminal

4.4.1 Connection Without a Modem

The maximum length of the connection cable without a modem is 15 m. Use a cable according to Figure 4-5.

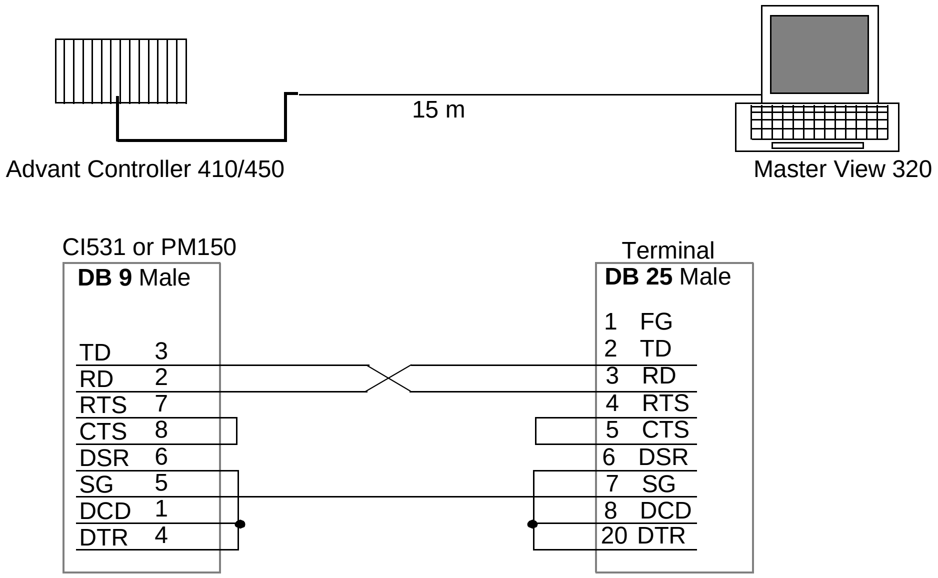


Figure 4-5. Connection without a modem

4.4.2 Connection with a Short Distance Modem

Use two modems of type DSTC X008 (MA12) or KM-1D for each terminal. The maximum length of the cable between the modems is 900 m when using 9600 baud. (The maximum length depends on baudrate and the type of modem). Use cables according to Figure 4-6 below.

Strap the modem to:

- Carrier wave always active
- CTS controlled by RTS.

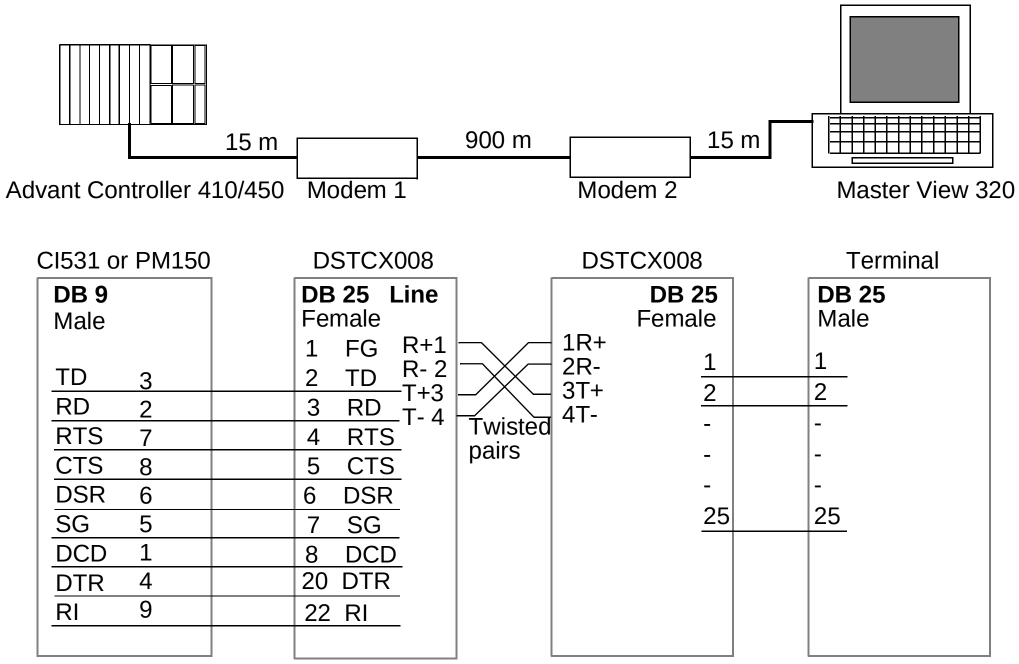


Figure 4-6. Connection with a Short Distance Modem

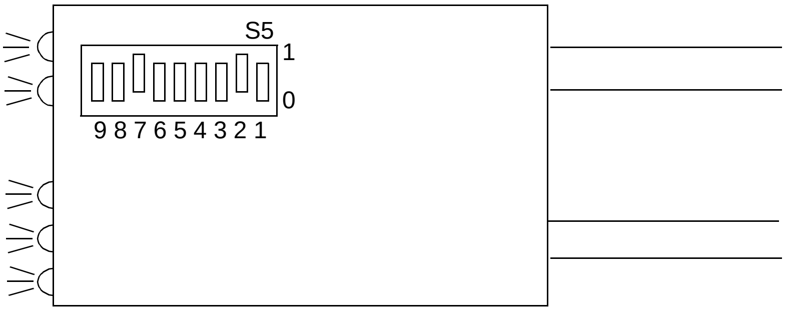


Figure 4-7. Strap settings for DSTC X008 (MA12) modem

4.4.3 Connection with a Telephone Modem

NOTE

Use of telephone modems is not included in the product test for MasterView 320. This manual does not supply complete instructions for use of telephone modems.

The MasterView 320 does not contain any software to control a telephone modem, but you can call:

- manually
- from a terminal, provided that it contains software for controlling modems.

Cables according to Figure 4-8 below can be used. Different types of modems may have different kinds of connections.

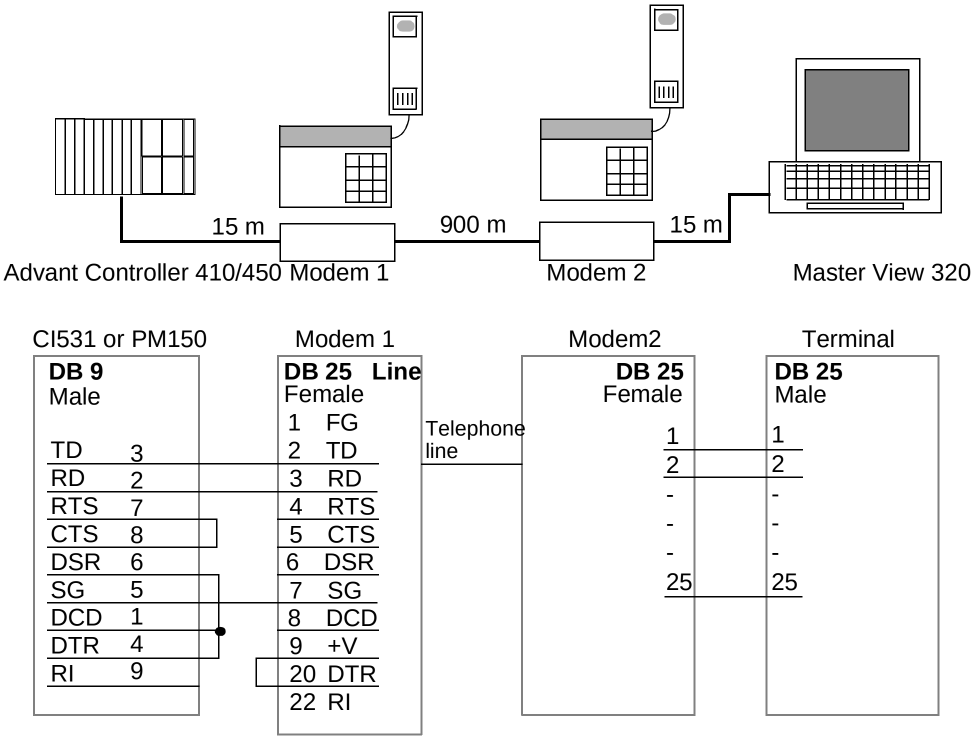


Figure 4-8. Connection with a telephone modem

The following points are critical:

- The Controller is not supposed to notice that the telephone line is connected or disconnected (that is why the pins 7-8, respectively 2-5-9, in Cable 1 are connected to each other, this is shown in Figure 4-8).
- Modem 1 should answer and connect the telephone line, even though the pins, according to the point above, are connected to each other.

For more information, see Section 8.8 Restart after Communication Interruption

4.5 Dimensioning the Data Base

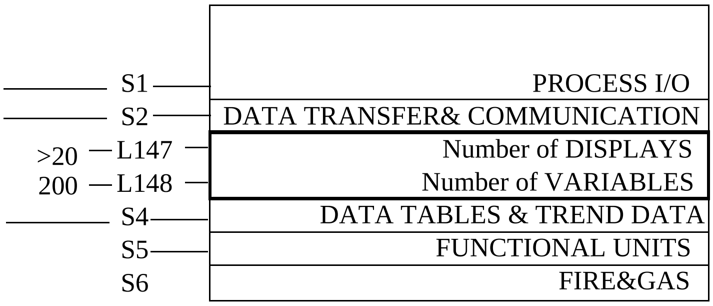


Figure 4-9. DIMDB for Master View 320

The command DIMDB in the Advant Station 100 Series Engineering Station is used for dimensioning the data base. The following values are dimensioned:

- The number of displays (Number of DISPLAYS), maximum 59.
- The number of dynamic variables (Number of VARIABLES), maximum 2700.

4.6 DB Elements for Installation, Overview

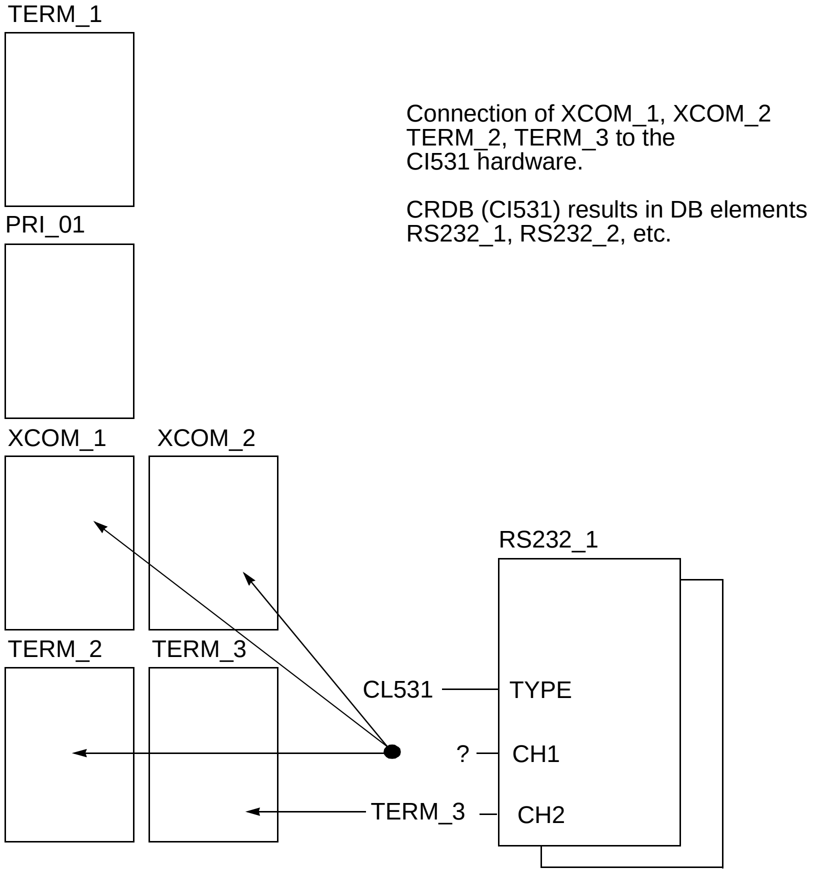

TERM_1
PRI_01
XCOM_1
XCOM_2
TERM_2
TERM_3
RS232_1
CL531
TYPE
?
CH1
TERM_3
CH2
Connection of XCOM_1, XCOM_2 TERM_2, TERM_3 to the CI531 hardware.
CRDB (CI531) results in DB elements RS232_1, RS232_2, etc.

Figure 4-10. DB Element for installation, Advant Controller 410

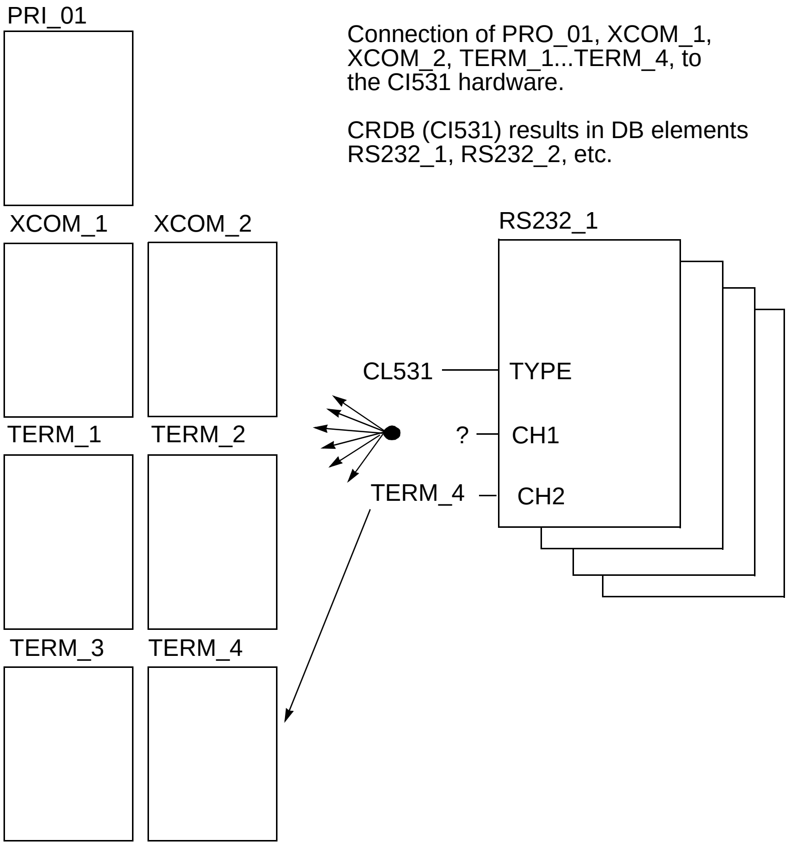

PRI_01
Connection of PRO_01, XCOM_1, XCOM_2, TERM_1...TERM_4, to the CI531 hardware.
CRDB (CI531) results in DB elements RS232_1, RS232_2, etc.
XCOM_1
XCOM_2
RS232_1
CL531
TYPE
TERM_1
TERM_2
?
CH1
TERM_4
CH2
TERM_3
TERM_4

Figure 4-11. DB Element for installation, Advant Controller 450

4.7 DB element CI531

The hardware CI531 is represented by the DB element CI531. The main functions for the element are to:

- indicate where in the subrack the hardware CI531 is placed
- indicate which function each of the two channels in CI531 has.

Example: Channel 1 is MV 320 terminal 3.
Channel 2 is Excom link 1.

Proceed as follows:

1. Create a CI531 element. Use the MasterAid command Create Data Base with the call name CI531: CRDB (CI531)
2. Set the following inputs:
   - POSITION
     AC 410: The position of the processor module, always position 1.
     AC 450: The position of the sub module carrier in the subrack, 1..14.
   - SUBPOS
     AC 410: The position of CI531 in PM150, 1..4
     AC 450: The position of CI531 in the sub module carrier, 1..2.
   - CH1
     Channel 1.
     The function which uses channel 1 of the CI531.
     Example:
     Channel 1 is to be used for the MasterView 320, terminal 3.
     Give the input CH1 the value TERM_3.
     This means that communication parameters for channel 1 in CI531 is in the DB element TERM_3.
   - CH2
     The function which uses channel 2 of the CI531.
     It is not necessary to modify any other inputs.
3. If you have several CI531 hardware modules, create and fill out more CI531 DB elements.

4.8 Data Base Element TERM

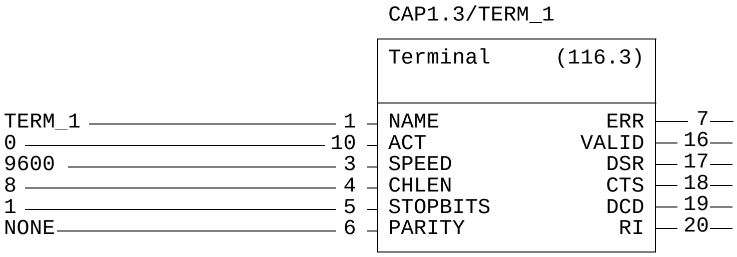


Figure 4-12. DB Element TERM

Each of the DB elements TERM_1, TERM_2, TERM_3 and TERM_4 represents one communication channel to a MasterView 320 terminal.

The TERM elements are system elements, i.e. you do not have to create them because they are already in the system. Proceed as follows:

1. Use the Advant Station 100 Series Engineering Station command “Modify Data Base”, e.g. MDB TERM_1.
2. Set the input ACT to 1, this marks that the terminal should be active.
3. Set the communication parameters you wish to have. Normally you do not have to change them.

The documentation for the DB element TERM can be found in the data base elements manual under the headline CAPTERM.

NOTE

The “call name” of the TERM element is CAPTERM. This means that the element is called CAPTERM in source code.

4.9 Data Base Element TERMPAR

```
                           TERMPAR
                          ┌──────────────────────┐
                          │Terminal Parameters   │
                          │             (182.1)  │
                          ├──────────────────────┤
ENGLISH  ────────────  1 ─┤LANGUAGE    TOT_SIZE  ├─X1───
VT100 ───────────────  2 ─┤TERMINAL              │
─────────────────────  3 ─┤DESCR                 │
1 ───────────────────  4 ─┤GENPER                │
1 ───────────────────  5 ─┤PRI_EV                │
1 ──────────────────   6 ─┤EV_LIST               │
100  ──────────────── 15 ─┤NUM_EV                │
──────────────────── 16 ─┤EV_HEAD1              │
──────────────────── 17 ─┤EV_HEAD2              │
0 ────────────────────7 ─┤NOCLOCK               │
1B 3D  ───────────── 18 ─┤COMSEQ                │
                          └──────────────────────┘
```

The DB elements TERMPAR1, TERMPAR2, TERMPAR3 and TERMPAR4 contain parameters for MasterView 320 terminal 1 - terminal 4.

The TERMPAR elements are system elements, i.e. they are already in the system, you do not have to create them. Proceed as follows:

1. Use the Advant Station 100 Series Engineering Station command “Modify Data Base”, e.g. MDB TERMPAR1.
2. Change the parameters you wish. All the parameters are listed below.

Table 4-1. Data Base element TERMPAR, parameters

LANGUAGE	This indicates the language to be used for prompts and error messages. Possible values are Danish, Dutch, English, Finnish, French, German, Italian, Norwegian, Portuguese, Spanish, Swedish. Initial value is English.
TERMINAL	Type of terminal to be used as MasterView 320. Only allowed value is VT100.
DESCR	A description of up to 18 characters which describes this particular MasterView 320 terminal. This description is output on the MasterView 320 screen below the text “WELCOME TO ADVANT CONTROLLER”. Initial value is blank. Note that if the description is less than 18 characters, then in order to display the description in a central position, leading spaces must be used.
GENPER	This means GENerate PERmission and, if set to 1, allows displays to be created or modified on the MasterView 320 terminal. This value must also be 1 if the date and time are to be changed using the MasterView 320. Initial value is 1. See chapter Section 5.4 End Generation.
PRI_EV	Set to 1 if events are to be automatically printed as they are received. See Chapter 7 Event Handling. Initial value is 1.
EV_LIST	Set to 1 if received events are to be stored in a list. See Chapter 7 Event Handling. Initial value is 0.
NUM_EV	Number of events in the list. The number must be between 0 and 100. Initial value is 100. See Chapter 7 Event Handling.

Table 4-1. Data Base element TERMPAR, parameters

EV_HEAD1 **EV_HEAD2**	These are two 18 character strings which are printed at the top of the event list to form a title. The first string begins at column 1 of the printout and the second string begins at column 19, regardless of the length of the first string. Initial values are blank.
NOCLOCK	No clock. If you set NOCLOCK to 1, the time is not displayed in the upper right corner of the screen. The terminal may then fade the light. This requires that the display on the screen has no cyclically updated variable.
COMSEQ	Command Sequence. At start up, this sequence is sent from the Controller to the terminal. The default value 1B 3D sets the keyboard to “Application keypad”. If you wish “Numeric keypad”, set COMSEQ to 1B 3E instead.

4.10 The Terminal

Set the communication parameters of the terminal so that they correspond with the parameters in the DB element TERM.

4.11 Start

4.11.1 Start after Configuration in Configuration Mode

If you have filled in the data base, according to the description on the previous pages, the MasterView 320 starts automatically:

- when the Controller changes from configuration mode to operation mode, i.e. after you have given the Advant Station 100 Engineering Station command DICONFIG.

The terminal will start about 30 s after the Controller. Some terminals use this time to perform a self test.

4.11.2 Configuration in Operation Mode, (“online”)

You can fill in the DB elements CI531, TERM, and TERMPAR even when the Controller is in operation mode. Proceed as follows:

1. Create and fill in the DB element CI531
2. Fill in the DB element TERM
3. Leave the DB element TERM by writing “END”. You will then get the question “DO YOU WANT TO ACTIVATE THE TERMINAL WITH THESE PARAMETERS (Y/N)?” If you answer “Y”, the MasterView 320 terminal will start.
4. Fill in the DB element TERMPAR. You will get the same question as for the TERM element.

(You may fill in the DB elements in a different order)

The terminal starts within 30 s after you have given the answer “Y”, some terminals use this time to perform a self test.

4.12 Changes in the Installation

4.12.1 Changing of Parameters in Operation Mode (“online”)

You can change parameters in the DB elements TERM and TERMPAR even when the Controller is in operation mode. Proceed as follows:

1. Enter the DB element by giving the Advant Station 100 Series Engineering Station command MDB (Modify Data Base). Change the parameters you wish to.
2. Leave the DB element by writing “END”. You will then get the question “DO YOU WANT TO ACTIVATE THE TERMINAL WITH THESE PARAMETERS (Y/N)?”
   - If you answer “Y”, the MasterView 320 terminal will restart with the new parameters within 30 s.
   - If you answer “N”, the MasterView terminal will continue with the old parameters, and change to the new ones at the next start.

4.12.2 Exchanging of CI531

You can exchange the hardware, i.e. CI531 and the sub module carriers SC510, SC520, and SC530 while in operation mode (“online”).

To close down the functions of the CI531 properly, you may, from the Advant Station 100 Series Engineering Station, use the input “SERVICE” on the DB element CI531. “SERVICE” means “in service”, i.e. when SERVICE=1, the CI531 is active.

- Set SERVICE=0, before you pull out the hardware.
- Set SERVICE=1, after you have placed the new hardware.

It is not necessary to use the input “SERVICE”. For more information, see chapter 8.7 “Restart after communication Interruption”

4.12.3 Delayed Start Up of CI531

If you do not want to start up immediately after you have configured the hardware CI531, you may use the input IMPL (implemented) on the DB element CI531.

- When IMPL=0, the Controller does not start up the hardware CI531.
- When IMPL is set to 1, the CI531 starts, i.e. the functions that you have defined on the inputs start.

(The input “IMPL” is practically identical to the input “SERVICE”)

4.12.4 Changing Positions of the CI531

The inputs “POSITION” and “SUBPOS” (submodule position) on the DB element CI531 indicate where in the subrack the hardware CI531 is placed. You can change these inputs from the Advant Station 100 Series Engineering Station. If you want to change them in operation mode (online), proceed as follows:

1. Stop the CI531 by setting the input IMPL=0.
2. Change “POSITION” and “SUBPOS”
3. Make sure that the hardware CI531 is placed where “POSITION” and “SUBPOS” indicate.
4. Start the functions of the CI531 by setting the input IMPL=1.

Chapter 5 Creating Displays

5.1 General

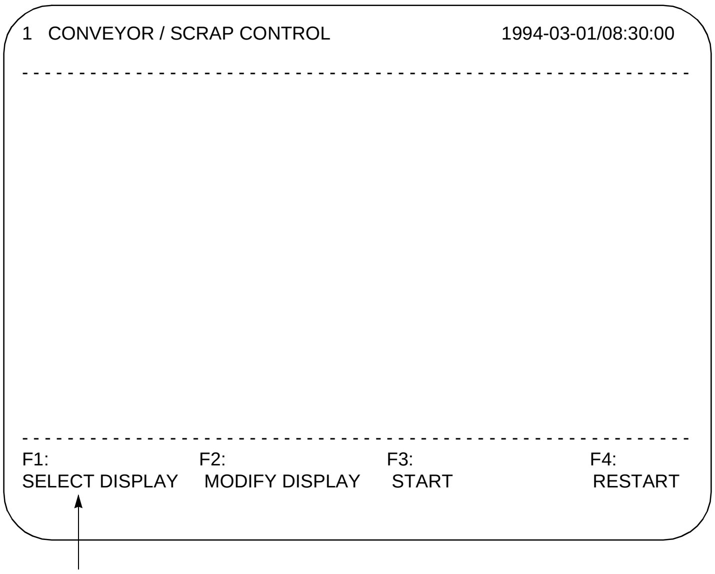
A display can consist of up to 50 static texts and 48 dynamic variables. It is possible to create a display with either just static texts or just dynamic variables.

It is useful to plan in advance the structure of each display. Calculate the number of static texts and dynamic variables and ensure that the output field widths of the dynamic variables will not overwrite any other variables or texts.

Use of memory in the data base is as follows:

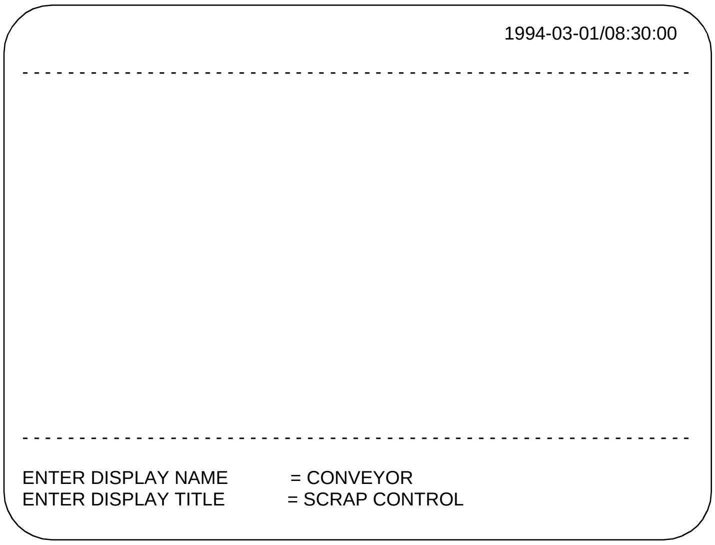
- 250 bytes per display
- 20 bytes per dynamic variable
- (10 bytes + number of characters) per static text.

To create a display, press function key F1. The MasterView 320 finds the number of the first free display and outputs it in the top select a specific display number - the next free number is automatically selected. A request for the display name is then output in the dialog area.



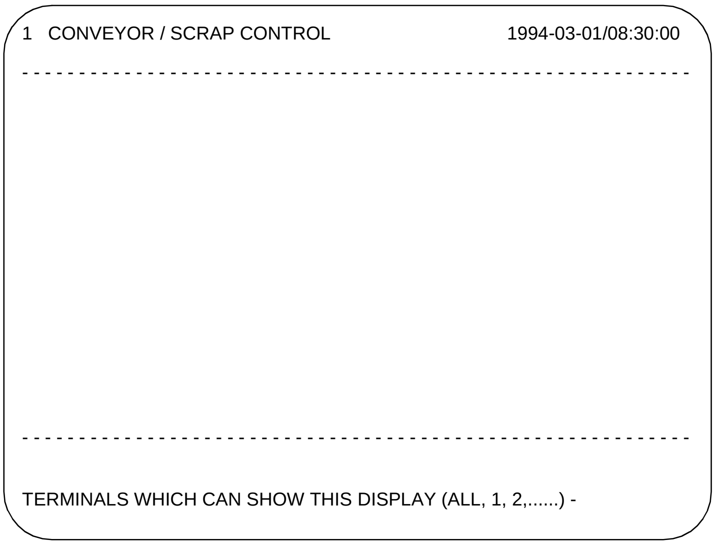
```
1   CONVEYOR / SCRAP CONTROL                        1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -




- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                 F2:                   F3:                    F4:
SELECT DISPLAY      MODIFY DISPLAY        START                  RESTART
```

The display name can contain up to 12 printable characters (except spaces) and must be unique. If you decide at this point that you do not want to create a display, just enter <CR>.



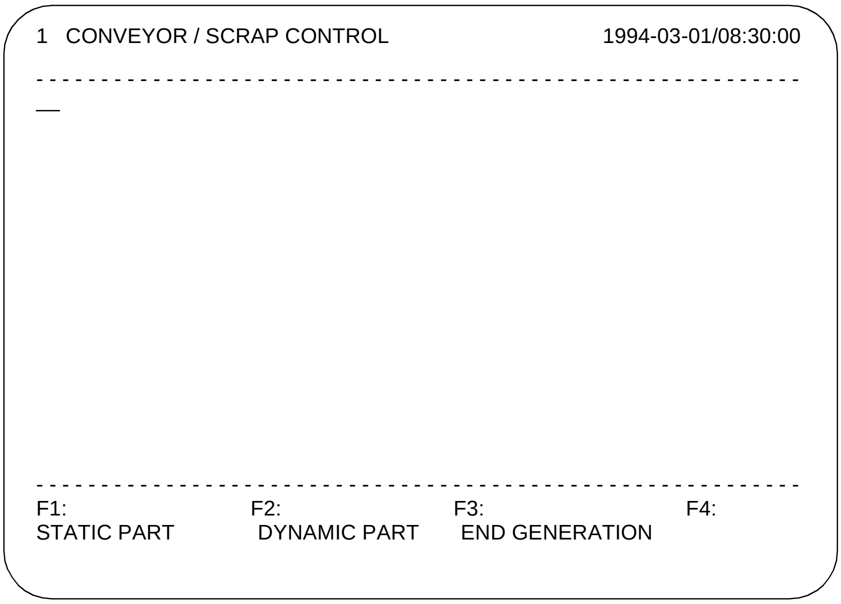
```
                                                    1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
ENTER DISPLAY NAME         = CONVEYOR
ENTER DISPLAY TITLE        = SCRAP CONTROL
```

Once a valid display name has been supplied, a request for the display title is output in the dialog area. This can contain up to 30 printable characters, including spaces. When a name and title have been supplied, there is a request for the terminals which are allowed to show this display. The answer can be <CR> (meaning “ALL”) or “ALL” followed by <CR> or, for instance: 1 <CR> or 3<CR> or 1,4<CR>. These are the terminals which are allowed to show the display. A terminal may create or modify a display, even if is not allowed to show it.



```
1   CONVEYOR / SCRAP CONTROL                        1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

TERMINALS WHICH CAN SHOW THIS DISPLAY (ALL, 1, 2,......) -
```

When a name and title have been supplied, the following screen is displayed:



```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
—









- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                  F2:                  F3:                    F4:
STATIC PART           DYNAMIC PART         END GENERATION
```

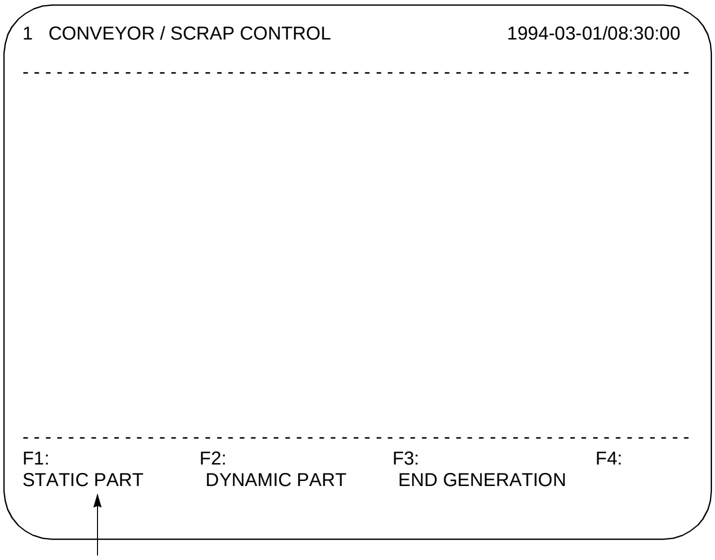
Figure 5-1. Default display when creating displays

A display has now been created and can be filled with static texts and dynamic variables.

During display generation, the current position of the cursor is displayed in the bottom right hand corner of the display area, in the form: XX/YY (column/line). See the arrow in Figure 5-3.

5.2 Defining Static Texts

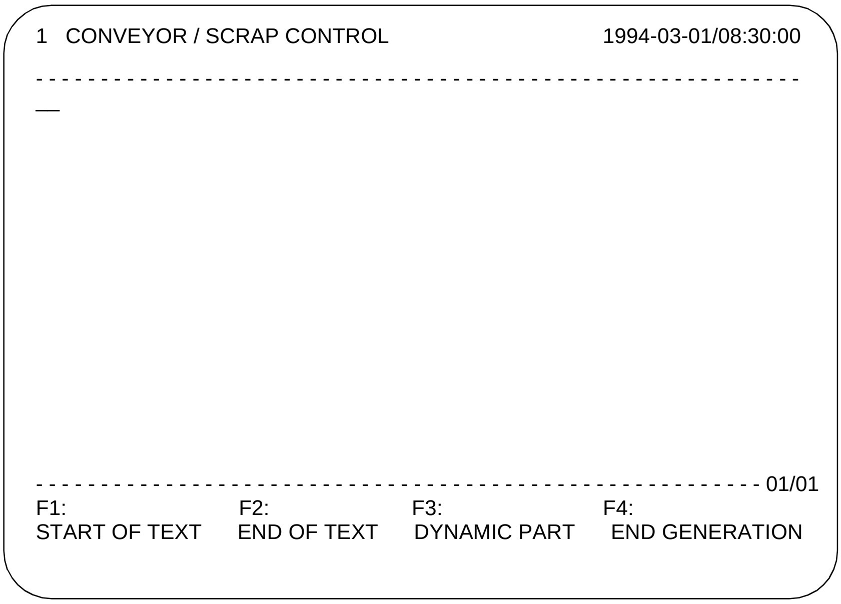
When a display is first created, it contains no static texts. The cursor is positioned in the top left hand corner of the display area.



```
1   CONVEYOR / SCRAP CONTROL                    1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -






- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                F2:                 F3:                      F4:
STATIC PART         DYNAMIC PART        END GENERATION
```

Figure 5-2. Screen display when it is first created

To create static texts, press function key F1. The following screen is displayed:

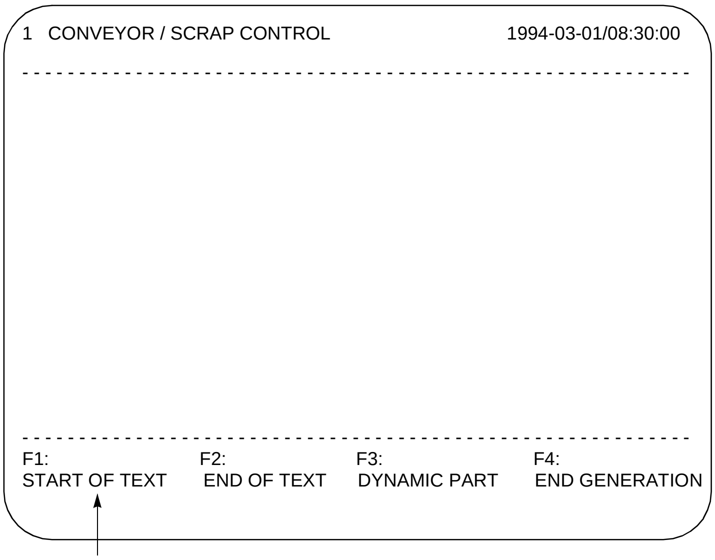


```
1   CONVEYOR / SCRAP CONTROL                       1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
__






- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 01/01
F1:                F2:               F3:                 F4:
START OF TEXT      END OF TEXT       DYNAMIC PART        END GENERATION
```

Figure 5-3. Screen display when creating static text

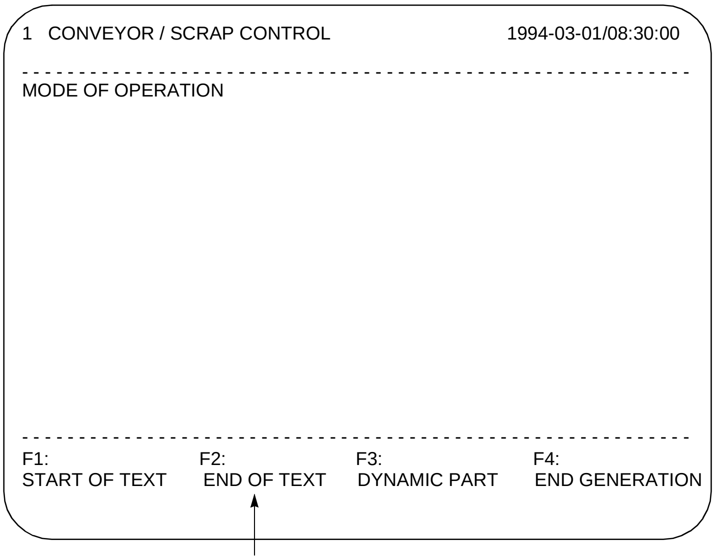
To define a single static text, position the cursor at the place where the text is to start. The cursor can be moved anywhere in the display area using the cursor positioning keys:.← ↓ → ↑. If → is pressed when the cursor is at the right hand side of the line, then unless it is already on the bottom line of the display area, the cursor moves it to the left hand end of the next line down. If ← is pressed when the cursor is at the left hand side of the line, then unless it is already on the top line of the display area, the cursor moves it to the right hand end of the next line up.

When the cursor is positioned in the correct place, press function key F1. The static text can now be defined. It can contain up to 20 printable characters, upper or lower case. Spaces are allowed within the text but not at the beginning or at the end of the text. To delete characters, press the key <DEL>. The cursor positioning keys cannot be used while inputting a text.



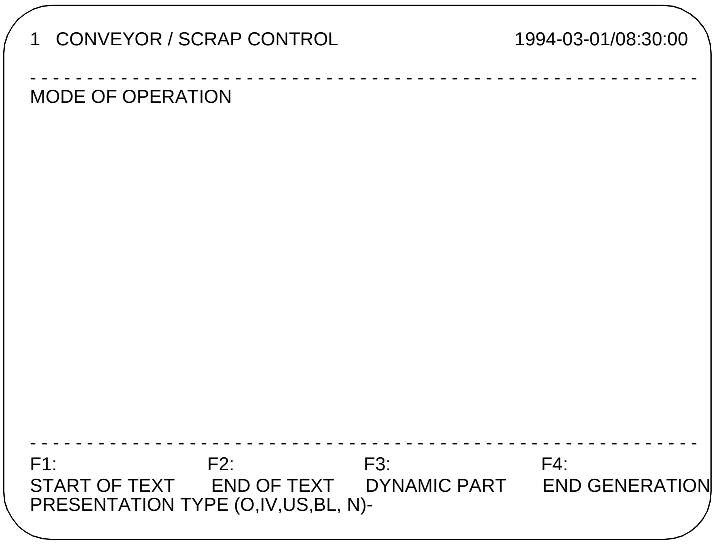
```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -







- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                  F2:                F3:                 F4:
START OF TEXT        END OF TEXT        DYNAMIC PART        END GENERATION
```

When the text has been defined, press function key 2.



```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION







- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                  F2:                F3:                 F4:
START OF TEXT        END OF TEXT        DYNAMIC PART        END GENERATION
```

A question is output in the dialog area, asking for the presentation type. The answer to this question can be F2 (again), <CR>, or 0 followed by <CR>, meaning no special presentation of IV,US,BL, N (separated by a comma), followed by <CR>. The static text is then redisplayed with the specified presentation type: Inverse Video, Under Score, BLinking, INtensity.



```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION









- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                  F2:                 F3:                 F4:
START OF TEXT        END OF TEXT         DYNAMIC PART        END GENERATION
PRESENTATION TYPE (O,IV,US,BL, N)-
```

Example:

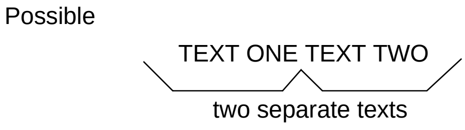
– To display a string in inverse video with blinking, type IV, BL followed by <CR>.

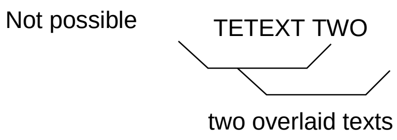
The presentation type “INtensity” can have a different effect depending on the type of terminal used. On standard VT100 terminals, strings with this presentation type are displayed in characters which are bolder than normal.

Up to 50 texts can be defined in one display.

It is possible to concatenate texts but it is not possible to overwrite one text with another.

Example:

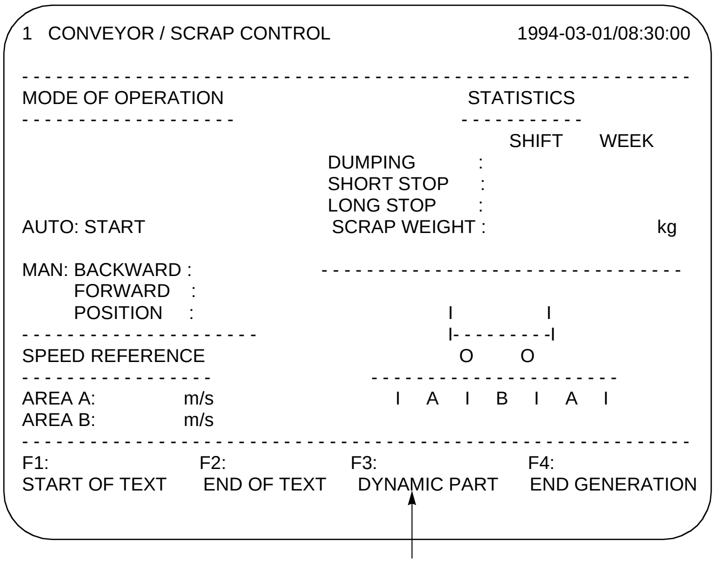




To redefine a text that has already been defined, position the cursor on any character within the text and press function key F1. The entire text is deleted and a new text can be defined, starting at the current cursor position.

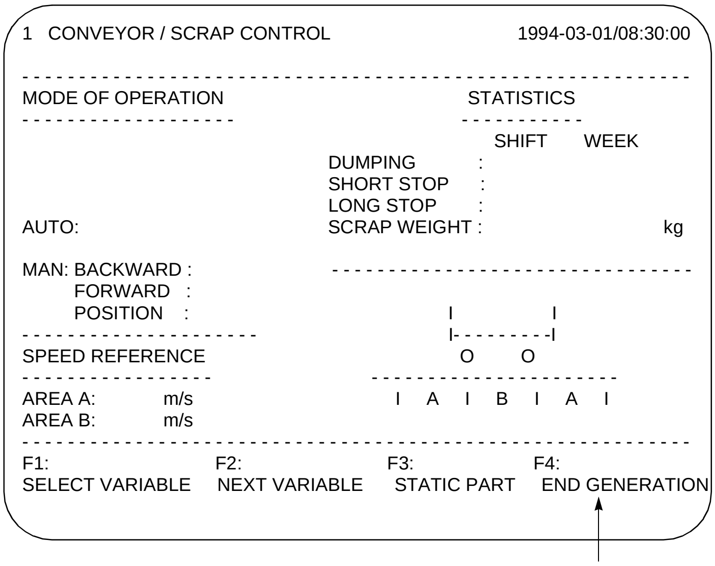
To delete an existing text, position the cursor on any character within the text and press function key F1 followed by function key F2. The entire text is deleted from the display.

During the creation of the static part of a display, it is possible to switch to the dynamic part and define dynamic variables. This is done by pressing function key F3.



```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                 STATISTICS
- - - - - - - - - - - - - - - -                   - - - - - - - - - -
                                                       SHIFT      WEEK
                                   DUMPING          :
                                   SHORT STOP       :
                                   LONG STOP        :
AUTO: START                        SCRAP WEIGHT :                         kg

MAN: BACKWARD :                    - - - - - - - - - - - - - - - - - - - - - - - -
        FORWARD   :
        POSITION    :                                I              I
- - - - - - - - - - - - - - - - - - -                I- - - - - - - - -I
SPEED REFERENCE                                        O       O
- - - - - - - - - - - - - - -              - - - - - - - - - - - - - - - - - -
AREA A:          m/s                          I    A    I    B    I    A    I
AREA B:          m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                  F2:                F3:                  F4:
START OF TEXT        END OF TEXT        DYNAMIC PART         END GENERATION
```

When all static texts and dynamic variables have been defined, terminate display generation by pressing function key F4. The screen Will then Show the display ¨WELCOME TO ADVANT CONTROLLER”.



```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                 STATISTICS
- - - - - - - - - - - - - - - -                   - - - - - - - - - -
                                                      SHIFT      WEEK
                                   DUMPING          :
                                   SHORT STOP       :
                                   LONG STOP        :
AUTO:                              SCRAP WEIGHT :                         kg

MAN: BACKWARD :                    - - - - - - - - - - - - - - - - - - - - - - - -
        FORWARD   :
        POSITION    :                                I              I
- - - - - - - - - - - - - - - - - - -                I- - - - - - - - -I
SPEED REFERENCE                                        O       O
- - - - - - - - - - - - - - -              - - - - - - - - - - - - - - - - - -
AREA A:          m/s                          I    A    I    B    I    A    I
AREA B:          m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                     F2:                 F3:               F4:
SELECT VARIABLE     NEXT VARIABLE      STATIC PART      END GENERATION
```

5.3 Defining Dynamic Variables

When a display is first created, it contains no dynamic variables. Up to 48 dynamic variables can be defined in any one display.

Each dynamic variable refers to a specific DAT element in the database which must have been created using the Create Data Base command CRDB on the Advant Station 100 Series Engineering Station. Each DAT element can have one of four data types: boolean, integer word, integer long word, real. Refer to the element data sheets for further information on DAT elements.

Integer long word variables can be used to store two additional data types: character and time.

When defining each variable, it is possible to specify whether the variable is changeable by the operator and whether the variable should be cyclically updated.

If the variable is marked as cyclically updated, the value of the variable is obtained from the DAT element and redisplayed every two seconds. This only happens when the display is selected for output, not during display generation.

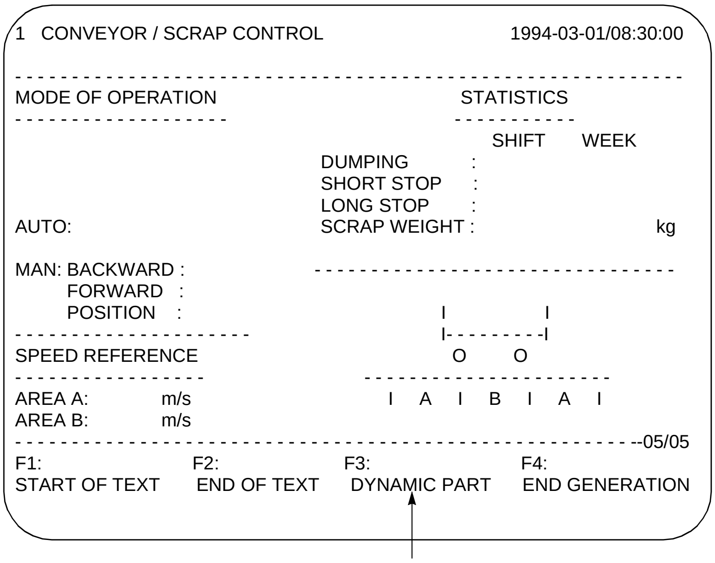
If the variable is not marked as cyclically updated, then the current value of the variable is displayed when the display is selected. If the value subsequently changes while the display is on the screen, then the new value will not be displayed until the display is selected again.

NOTE

Even if a variable is marked as cyclically updated, it is not cyclically updated while the display is being generated.

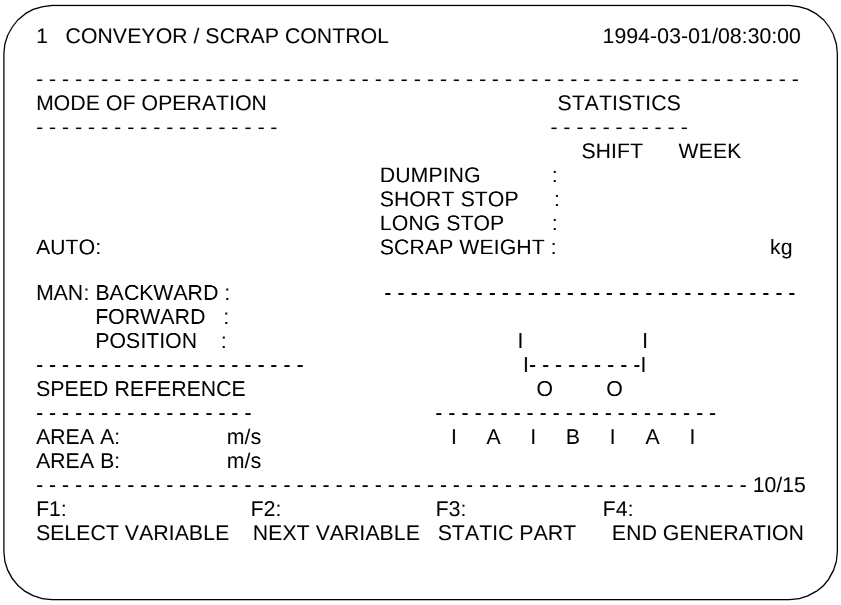
All variables may have a presentation type of one or more of Inverse Video, UnderScore, Blinking, INtensity. The presentation type “intensity” can have a different effect depending upon the type of terminal used. On standard VT100 terminals, variables with this presentation type are displayed in characters which are bolder than normal.

To create dynamic variables, press function key F3. The screen below is displayed.



```
1   CONVEYOR / SCRAP CONTROL                         1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                   STATISTICS
- - - - - - - - - - - - - - - - - -                 - - - - - - - - - - -
                                                        SHIFT      WEEK
                               DUMPING          :
                               SHORT STOP       :
                               LONG STOP        :
AUTO:                          SCRAP WEIGHT :                          kg

MAN: BACKWARD :               - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD   :
     POSITION   :                          I             I
- - - - - - - - - - - - - - - - - - - -                    I- - - - - - - - -I
SPEED REFERENCE                                O        O
- - - - - - - - - - - - - - - - -          - - - - - - - - - - - - - - - - - - - - -
AREA A:          m/s                         I    A    I    B    I    A    I
AREA B:          m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - --05/05
F1:              F2:              F3:               F4:
START OF TEXT    END OF TEXT     DYNAMIC PART      END GENERATION
```

Figure 5-4. Screen display when creating dynamic variables

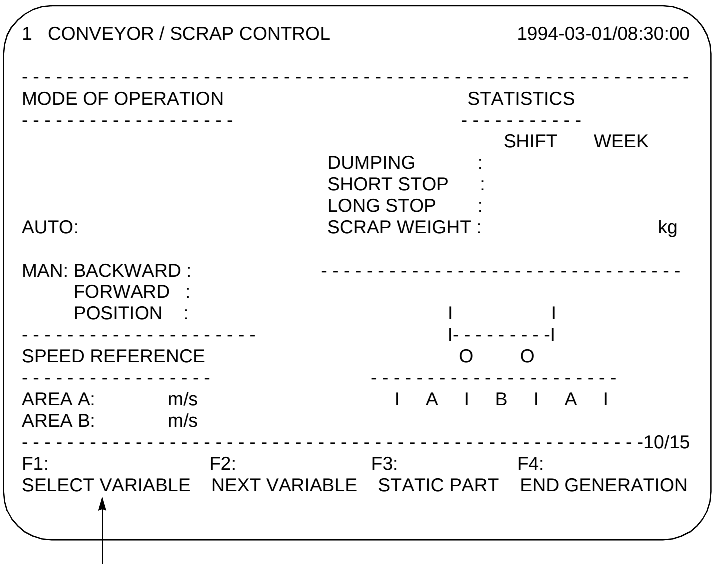


```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                       STATISTICS
- - - - - - - - - - - - - - - - - -                     - - - - - - - - - - -
                                                            SHIFT     WEEK
                                  DUMPING          :
                                  SHORT STOP       :
                                  LONG STOP        :
AUTO:                             SCRAP WEIGHT :                          kg

MAN: BACKWARD :                   - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD   :
     POSITION   :                              I              I
- - - - - - - - - - - - - - - - - - - - -         I- - - - - - - - - -I
SPEED REFERENCE                                    O        O
- - - - - - - - - - - - - - - - -              - - - - - - - - - - - - - - - - - - - - - -
AREA A:              m/s                         I    A    I    B    I    A    I
AREA B:              m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 10/15
F1:                  F2:                  F3:                  F4:
SELECT VARIABLE    NEXT VARIABLE    STATIC PART      END GENERATION
```

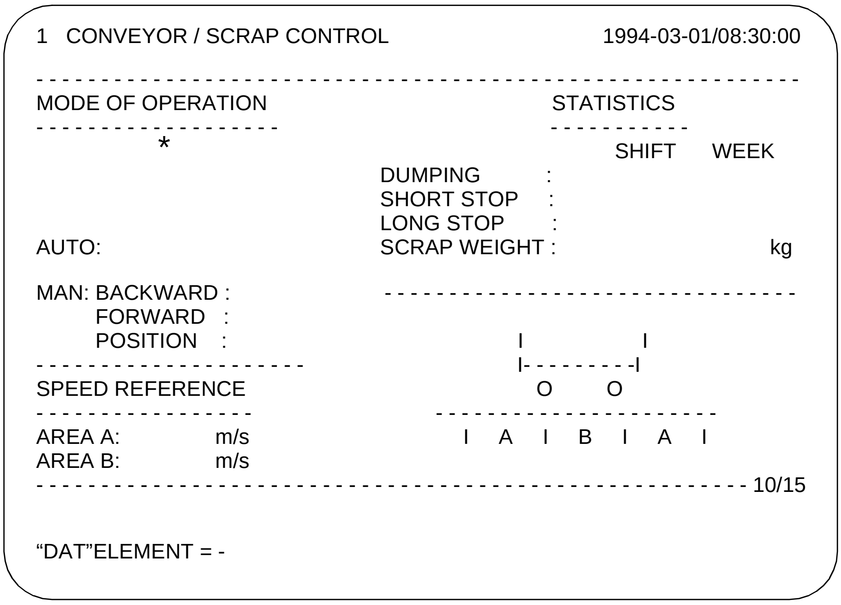
Figure 5-5. Screen display when defining dynamic variables

To define a single dynamic variable, position the cursor at the place where the variable is to be displayed.The cursor can be moved anywhere in the display area using the cursor positioning keys ← → ↓ ↑.

When the cursor is positioned in the correct place, press function key F1. An asterisk (*) is output in the place where the dynamic variable is to be displayed. A request is output in the dialog area for the identity of the DAT element containing the dynamic value for the defined variable.



```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                      STATISTICS
- - - - - - - - - - - - - - - - - -                    - - - - - - - - - - -
                                                            SHIFT      WEEK
                                DUMPING         :
                                SHORT STOP      :
                                LONG STOP       :
AUTO:                           SCRAP WEIGHT :                               kg

MAN: BACKWARD :                 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD  :
     POSITION   :                          I              I
- - - - - - - - - - - - - - - - - - - -    I- - - - - - - - -I
SPEED REFERENCE                              O       O
- - - - - - - - - - - - - - - - -       - - - - - - - - - - - - - - - - - - - - - -
AREA A:          m/s                      I   A   I   B   I   A   I
AREA B:          m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -10/15
F1:                  F2:                F3:              F4:
SELECT VARIABLE   NEXT VARIABLE   STATIC PART   END GENERATION
```



```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                      STATISTICS
- - - - - - - - - - - - - - - - - - -                  - - - - - - - - - - -
           *                                                SHIFT      WEEK
                                DUMPING         :
                                SHORT STOP      :
                                LONG STOP       :
AUTO:                           SCRAP WEIGHT :                               kg

MAN: BACKWARD :                 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD  :
     POSITION   :                          I              I
- - - - - - - - - - - - - - - - - - - -    I- - - - - - - - -I
SPEED REFERENCE                              O       O
- - - - - - - - - - - - - - - - -       - - - - - - - - - - - - - - - - - - - - - -
AREA A:          m/s                      I   A   I   B   I   A   I
AREA B:          m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 10/15


“DAT”ELEMENT = -
```

Figure 5-6. Definition of dynamic variable

If the DAT element is of data type boolean, then the element identity must also contain the terminal name or terminal number. If a terminal identity is not supplied, a default identity is assumed. The terminal identities are:

Table 5-1. The data types connection identities

Data type	Terminal number	Terminal name
Boolean (B):	4 5 6 * * 35	VALUE (default) VALUE2 VALUE3 * * VALUE32
Integer word (I*2):	36	VALUE (default)
Integer ling word (I*4)	37	VALUE (default)
Real (R):	38	VALUE (default)

The identity of the DAT element can be given in a number of ways, e.g:

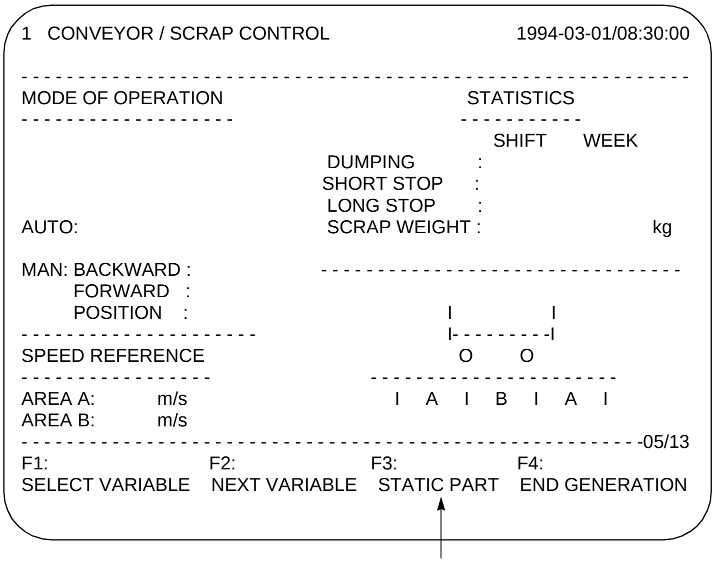
110.1	Numeric file and record number.
110.1:5	Numeric file and record number plus terminal identity.
DAT1	Item designation.
DAT1:VALUE2	Item designation plus terminal identity.
A-NAME	Element name.
A-NAME:VALUE	Element name plus terminal identity.

When a valid DAT element identity has been supplied, the data type of the variable is displayed in the dialog area. There follows a series of questions in the dialog area about how the variable is to be displayed.

The questions vary depending on the data type of the variable held in the specified DAT element. The questions are described in detail in the following sections. When all the questions have been answered, the current value of the variable is obtained from the DAT element and displayed on the screen in place of the asterisk.

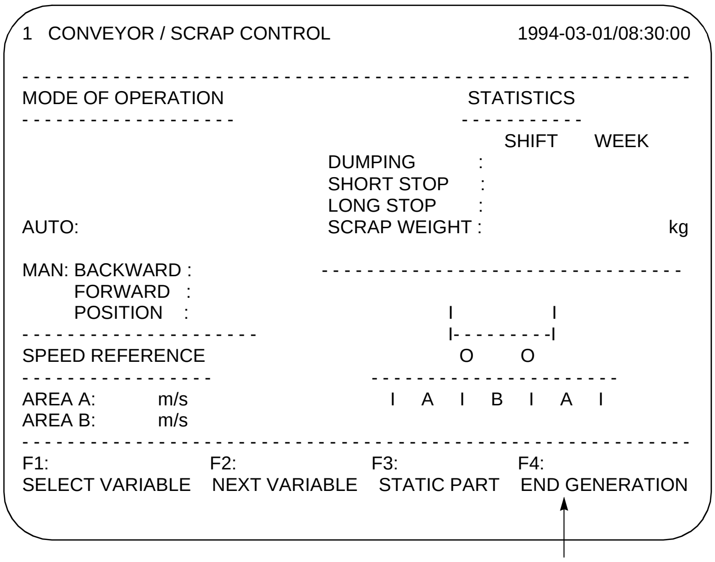
Boolean variables and character variables are displayed left justified and other variables are displayed right justified within the specified field width. Time variables are displayed in a fixed field width of 8 characters. The cursor is placed at the start (i.e.. left hand end) of the field. In the case of integers and real numbers, if the field width is too small to display the full value of the variable, it is filled with asterisks ("*").

To redefine or delete a dynamic variable already defined, see Section 6.3 Modifying Dynamic Variables. During the creation of the dynamic part of a display, it is possible to switch to the static part and define static texts. This is done by pressing function key F3.



```
1   CONVEYOR / SCRAP CONTROL                        1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                              STATISTICS
- - - - - - - - - - - -                        - - - - - - -
                                                  SHIFT     WEEK
                             DUMPING        :
                             SHORT STOP     :
                             LONG STOP      :
AUTO:                        SCRAP WEIGHT :                        kg

MAN: BACKWARD :              - - - - - - - - - - - - - - - - - - - - -
     FORWARD   :
     POSITION    :                      I          I
- - - - - - - - - - - - -               I- - - - - - -I
SPEED REFERENCE                          O      O
- - - - - - - - - - -                - - - - - - - - - - - - - - -
AREA A:      m/s                     I   A   I   B   I   A   I
AREA B:      m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -05/13
F1:                F2:              F3:             F4:
SELECT VARIABLE    NEXT VARIABLE    STATIC PART     END GENERATION
```

When all the static texts and dynamic variables have been defined, terminate display generation by pressing function key F4.



```
1   CONVEYOR / SCRAP CONTROL                        1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                              STATISTICS
- - - - - - - - - - - -                        - - - - - - -
                                                  SHIFT     WEEK
                             DUMPING        :
                             SHORT STOP     :
                             LONG STOP      :
AUTO:                        SCRAP WEIGHT :                        kg

MAN: BACKWARD :              - - - - - - - - - - - - - - - - - - - - -
     FORWARD   :
     POSITION    :                      I          I
- - - - - - - - - - - - -               I- - - - - - -I
SPEED REFERENCE                          O      O
- - - - - - - - - - -                - - - - - - - - - - - - - - -
AREA A:      m/s                     I   A   I   B   I   A   I
AREA B:      m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                F2:              F3:             F4:
SELECT VARIABLE    NEXT VARIABLE    STATIC PART     END GENERATION
```

5.3.1 Boolean Variables

Boolean variables can be represented on the screen by one of 20 strings. The 20 strings are common to all displays and can be defined or modified whenever a display is being created or modified. Alternatively, boolean variables can be represented by the default strings of “0” and “1”. The questions asked for boolean variables are as follows:

Question: VALUE “0” IS REPRESENTED AS =

Answer: String of up to 12 characters which is to represent the boolean value of “0” or FALSE. If <CR> is entered, then “0” is used for FALSE and “1” is used for TRUE. In this case, the following question is not asked.

Question: VALUE “1” IS REPRESENTED AS =

Answer: String of up to 12 characters which is to represent the boolean value of “1” or TRUE. A string must be entered, even if it contains only spaces.

If the character “?” is input as answer to either of the above questions, then the list of existing strings is output in the dialog area.To use an existing string, type either the string or its number.

Example: String number 5 is already defined as “OFF”. To use “OFF” again, type either OFF or #5.

To define a new string, just type the string. The new string will occupy the first free position in the list of 20. To redefine an existing string, type the number of the string, followed by its new value.

Example: # 5/STOPPED.

The default values of “0” and “1” do not occupy places in the list of 20 strings, unless they are specifically input in answer to the above questions.

Question: PRESENTATION TYPE =

Answer: Type of presentation required for output. If no special presentation, type <CR> or 0 followed by <CR>. Otherwise input a combination of IV, US, BL, IN, followed by <CR>.

Example: To display a boolean string in inverse video, type IV.

The presentation type selected applies to both the TRUE and FALSE values of the boolean variable.

Question: FIELD WIDTH =

Answer: Number of character spaces occupied by the output string. Typically, this is equal to the longer of the two strings defined in the previous questions. The number must be between 1 and 12. The string is displayed left justified within the specified field width.

Question: CYCLICALLY UPDATED (YES/NO) =

Answer: Indicates whether the variable is to be updated in the display every 2 seconds.

Question: CHANGEABLE BY OPERATOR (YES/NO)=

Answer: Indicates whether the variable can be modified on- line by the operator.

5.3.2 Integer Variables

For variables of data type integer long, the value may be displayed as an integer or as a string of 1 to 4 characters or as time in the form HH:MM:SS. If the integer is displayed in character form, it is said to be data type character. The value in the integer is divided into 4 bytes, each one representing an ASCII character. The number of characters displayed is determined by the field width, which can have a value between 1 and 4.

Example: If a byte contains 65, the character displayed is “A”.

If a byte contains a non ASCII value, then an asterisk (“*”) is displayed.

If a byte contains a zero, then a space is displayed.

See Section 10.7 Using the Character Data Type for more information on using this type of variable within PC programs.

If the integer long is displayed in time form, it is said to be data type “time”. The value in the integer represents a count of the number of seconds since midnight. Its display range is 00:00:00 to 23:59:59. If the integer value is outside the range 0 - 86399, then “**:**:**” is displayed.

Question: PRESENTATION TYPE =

Answer: Type of presentation required for output. If no special presentation is required, type <CR> or 0 followed by <CR>. Otherwise input a combination of IV, US, BL, IN, followed by <CR>.To specify data type of time or character, input TIM or CHR.

Example: To specify a time data type with underscore, type: TIM, US.To specify a character data type with inverse video, type: CHR, IV.

Question: FIELD WIDTH =

Answer: Number of character spaces occupied by the output variable. This should be large enough to hold the expected maximum size of the integer.For integer words, the number must be between 1 and 6.For integer long words, the number must be between 1 and 11.The variable is displayed right justified within the specified field width.For “character” data types, the field width must be between 1 and 4. The character(s) are displayed left justified within the specified field width. If there are not enough characters to fill the field trailing spaces are added. For “time” data types, the field width is a fixed value of 8, so this question is not asked.

Question: CYCLICALLY UPDATED (YES/NO) =

Answer: Indicates whether the variable is to be updated in the display every 2 seconds.

Question: CHANGEABLE BY OPERATOR (YES/NO)=

Answer: Indicates whether the variable can be modified on-line by the operator.

Question: MINIMUM VALUE =

Answer: This question is asked only if the variable can be changed by the operator. The answer should be the minimum value that the operator is allowed to input. For integers, if only <CR> is entered, then the minimum value is 0.For “character” data types, this question is only asked if the field width is 1. Only one character should be input. If only <CR> is entered, then the range for operator input is all printable characters. In this case, the question for the maximum value is not asked.For “time” data types, the input must be in the form HH:MM:SS.If only <CR> is entered, then the minimum value is 00:00:00.

Question: MAXIMUM VALUE =

Answer: This question is asked only if the variable can be changed by the operator. The answer should be the maximum value that the operator is allowed to input. For integers, if only <CR> is entered, then the maximum value is 0.

For “character” data types, only one character should be input. An input of only <CR> is not allowed.

For “time” data types, the input must be in the form HH:MM:SS.

If only <CR> is entered, this is only allowed if the minimum value is 00:00:00. In this case the range is 00:00:00 to 23:59:59.

For integers, if the answer to both of the above two questions is 0, then the minimum and maximum values depend on the data type.For data type I is the range -32768 to +32767. For data type IL is the range -2147483647 to +2147483647.

5.3.3 Real Variables

Question: PRESENTATION TYPE =

Answer: Type of presentation required for output. If no special presentation is required, type <CR> or 0 followed by <CR>. Otherwise input a combination of IV, US, BL,IN, followed by <CR>.

Example: To display a real variable with blink and inverse video, type BL, IV.

Question: EXPONENTIAL FORMAT (YES/NO) =

Answer: The variable can be output in either floating point format (exponential) or fixed point format.

Question: NUMBER OF DECIMAL PLACES =

Answer: For a floating point number, the number of decimal places must be between 1 and 6.For a fixed point number, the number of decimal places must be between 1 and 13.

Question: FIELD WIDTH =

Answer: Number of character spaces occupied by the output variable. This should be large enough to hold the expected maximum size of the variable.For a floating point number, this question is not asked, since the field width is always equal to the number of decimal places plus 7.For a fixed point number, the field width must be between 1 and 21.The variable is displayed right justified within the specified field width.

Question: CYCLICALLY UPDATED (YES/NO) =

Answer: Indicates whether the variable is to be updated in the display every 2 seconds.

Question: CHANGEABLE BY OPERATOR (YES/NO)=

Answer: Indicates whether the variable is to be modified on-line by the operator.

Question: MINIMUM VALUE =

Answer: This question is asked only if the variable can be changed by the operator. The answer should be the minimum value that the operator is allowed to input.If only <CR> is entered, then the minimum value is 0.

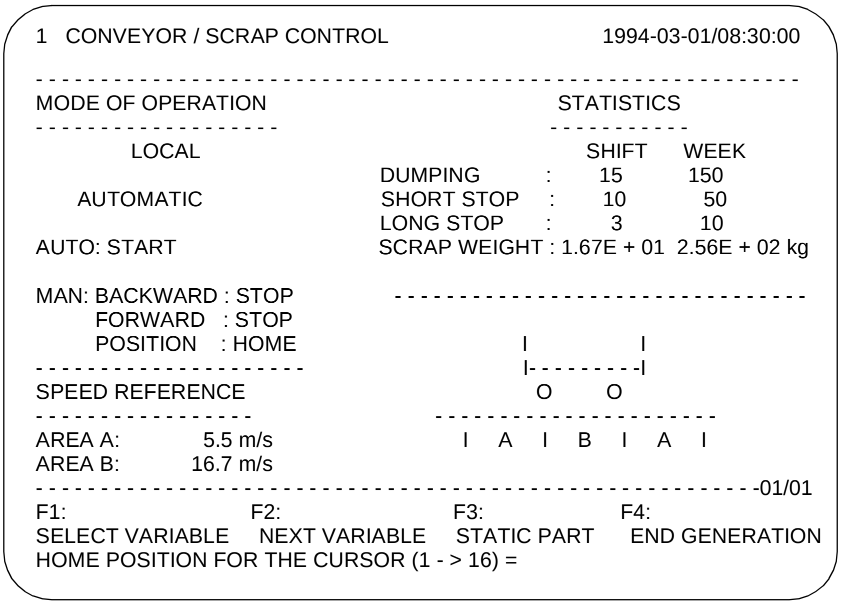
Question: MAXIMUM VALUE =

Answer: This question is asked only if the variable can be changed by the operator. The answer should be the maximum value that the operator is allowed to input. If only <CR> is entered, then the minimum value is 0.

If the answer to both of the above two questions is 0, then the minimum and maximum values are the same as those for the data type.

5.4 End Generation

When the function key is pressed for END GENERATION, some further questions are asked in the dialog area. If the display contains more than one changeable dynamic variable, a request is made for the home cursor position.



```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                   STATISTICS
- - - - - - - - - - - - - - - - - -                 - - - - - - - - - - -
        LOCAL                                          SHIFT     WEEK
                                  DUMPING       :       15        150
    AUTOMATIC                     SHORT STOP    :       10         50
                                  LONG STOP     :        3         10
AUTO: START                       SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP               - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD   : STOP
     POSITION    : HOME                        I               I
- - - - - - - - - - - - - - - - - - - -        I- - - - - - - - -I
SPEED REFERENCE                                  O        O
- - - - - - - - - - - - - - - - -          - - - - - - - - - - - - - - - - - - - - - -
AREA A:           5.5 m/s                  I    A    I    B    I    A    I
AREA B:          16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -01/01
F1:                      F2:                    F3:                F4:
SELECT VARIABLE    NEXT VARIABLE    STATIC PART     END GENERATION
HOME POSITION FOR THE CURSOR (1 - > 16) =
```

Figure 5-7. End generation, question 1

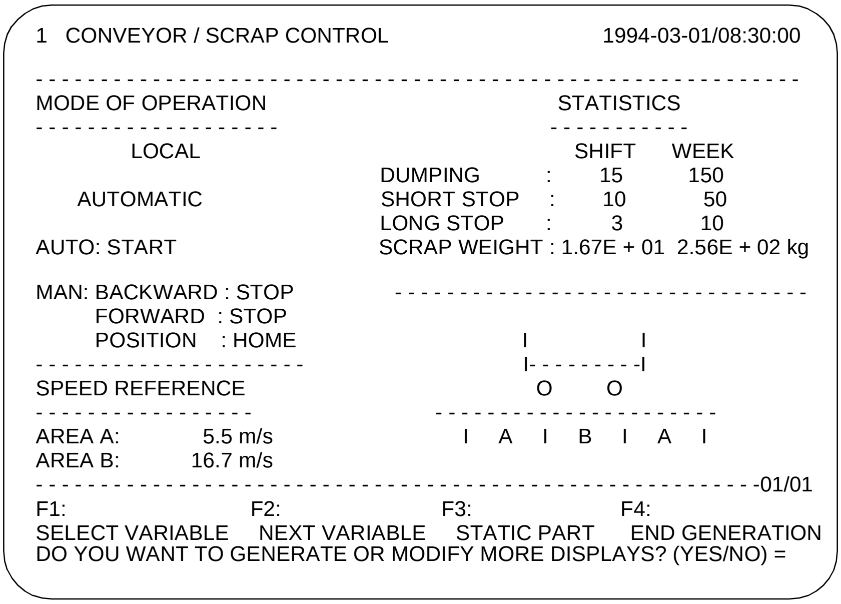
This is the variable upon which the cursor is placed when a display is first selected for output. The identity of the variable is calculated by counting all the dynamic variables, starting from the top left of the screen and moving from left to right until the variable is reached.

Example: If the cursor is to be placed on the “AUTO” variable in the example, then the home cursor position is 9.

If no special home cursor position is required, the answer to the question should be END GENERATION (again) or <CR>. The home cursor position is then the first changeable variable in the display.

If there are no changeable variables or only one changeable variable, the question is not asked at all.

The next question to be asked in the dialog area is whether it is necessary to generate or change any more displays.

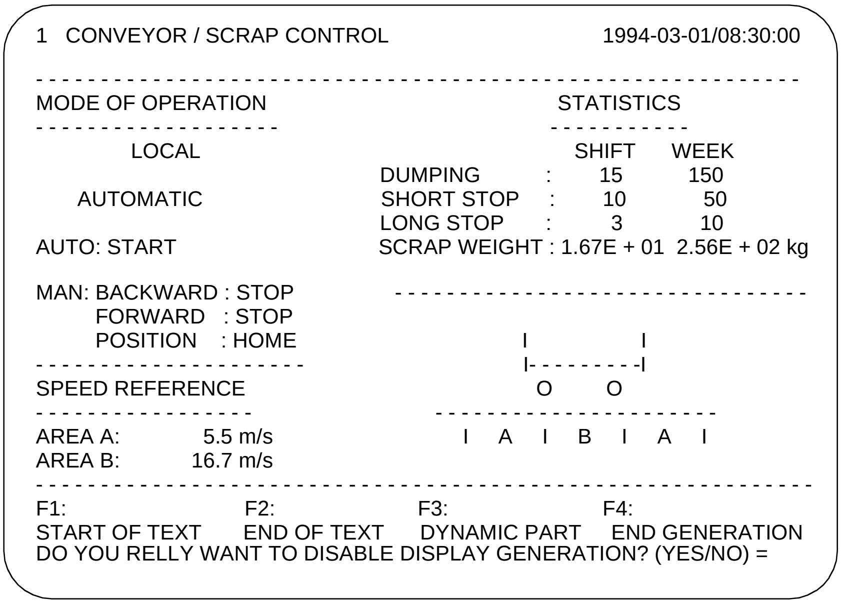


```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                         STATISTICS
- - - - - - - - - - - - - - - - - -                       - - - - - - - - - - -
          LOCAL                                             SHIFT    WEEK
                                  DUMPING       :     15        150
     AUTOMATIC                    SHORT STOP    :     10         50
                                  LONG STOP     :      3         10
AUTO: START                       SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP              - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       FORWARD  : STOP
       POSITION    : HOME                       I              I
- - - - - - - - - - - - - - - - - - - -         I- - - - - - - - -I
SPEED REFERENCE                                    O        O
- - - - - - - - - - - - - - - - -              - - - - - - - - - - - - - - - - - - - - -
AREA A:           5.5 m/s                I    A    I    B    I    A    I
AREA B:          16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -01/01
F1:                      F2:                    F3:                    F4:
SELECT VARIABLE     NEXT VARIABLE     STATIC PART     END GENERATION
DO YOU WANT TO GENERATE OR MODIFY MORE DISPLAYS? (YES/NO) =
```

Figure 5-8. End generation, question 2

If more displays are to be generated or modified, the answer should be END GENERATION (again) or <CR> or YES followed by <CR>. The screen “WELCOME TO ADVANT CONTROLLER” will then be redisplayed.

If the answer to the question is NO, a further question is asked for confirmation:

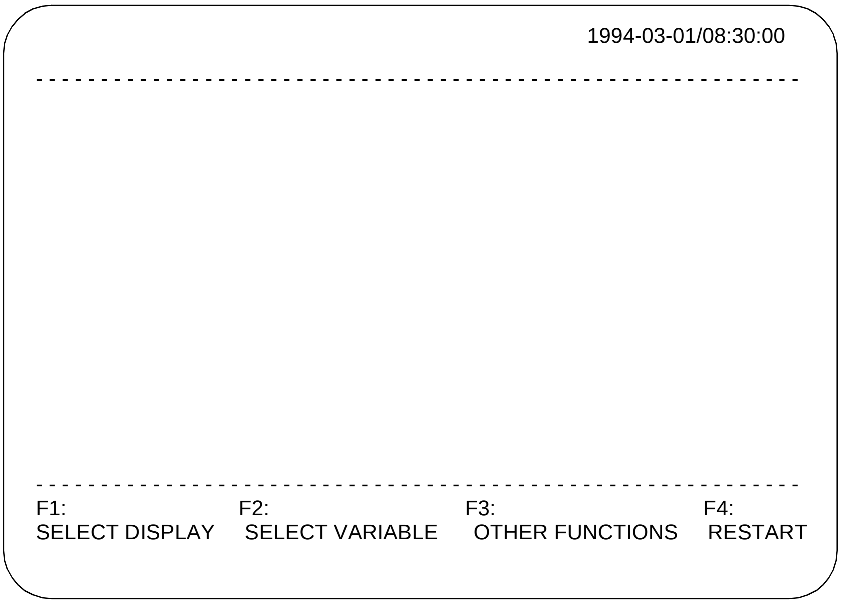


```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                         STATISTICS
- - - - - - - - - - - - - - - - - -                       - - - - - - - - - - -
          LOCAL                                             SHIFT    WEEK
                                  DUMPING       :     15        150
     AUTOMATIC                    SHORT STOP    :     10         50
                                  LONG STOP     :      3         10
AUTO: START                       SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP              - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       FORWARD   : STOP
       POSITION    : HOME                       I              I
- - - - - - - - - - - - - - - - - - - -         I- - - - - - - - -I
SPEED REFERENCE                                    O        O
- - - - - - - - - - - - - - - - -              - - - - - - - - - - - - - - - - - - - - -
AREA A:           5.5 m/s                I    A    I    B    I    A    I
AREA B:          16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                     F2:                   F3:                      F4:
START OF TEXT      END OF TEXT      DYNAMIC PART     END GENERATION
DO YOU RELLY WANT TO DISABLE DISPLAY GENERATION? (YES/NO) =
```

Figure 5-9. End generation, question 3

If you change your mind and decide not to disable display generation, answer END GENERATION (again) or NO followed by <CR>. The screen “WELCOME TO ADVANT CONTROLLER” will then be redisplayed.

If display generation is to be disabled, answer YES followed by <CR>. The terminal GENPER in data base element TERMPAR is set to 0 and the following screen is displayed:



```
                                                     1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -










- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:               F2:                 F3:                 F4:
SELECT DISPLAY    SELECT VARIABLE     OTHER FUNCTIONS     RESTART
```

Figure 5-10. Generation ended

The CREATE DISPLAY and MODIFY DISPLAY functions are now not available. To restore these functions, the terminal GENPER in data base element TERMPAR must be set to 1.

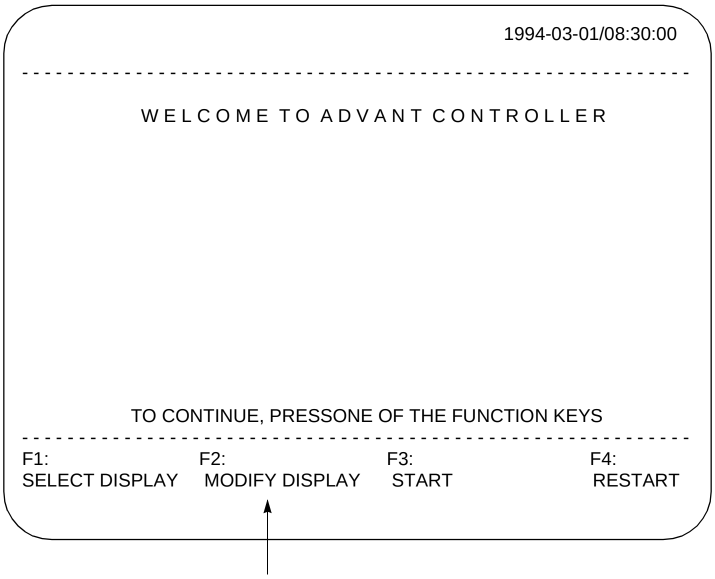
NOTE

During display generation, an answer, YES or NO, is frequently required. In these cases, it is sufficient to input only the first letter of the answer, “Y” or “N”.

Chapter 6 Modifying And Deleting Displays

6.1 General

To modify or delete a display, press function key F2.



```
                                                   1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
              W E L C O M E  T O  A D V A N T  C O N T R O L L E R




                TO CONTINUE, PRESSONE OF THE FUNCTION KEYS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:               F2:               F3:                  F4:
SELECT DISPLAY    MODIFY DISPLAY    START                RESTART
```

A request for the display name or number is output in the dialog area. If you decide at this point that you do not want to change or delete a display, just enter <CR> and the screen “WELCOME TO ADVANT CONTROLLER” will be redisplayed.

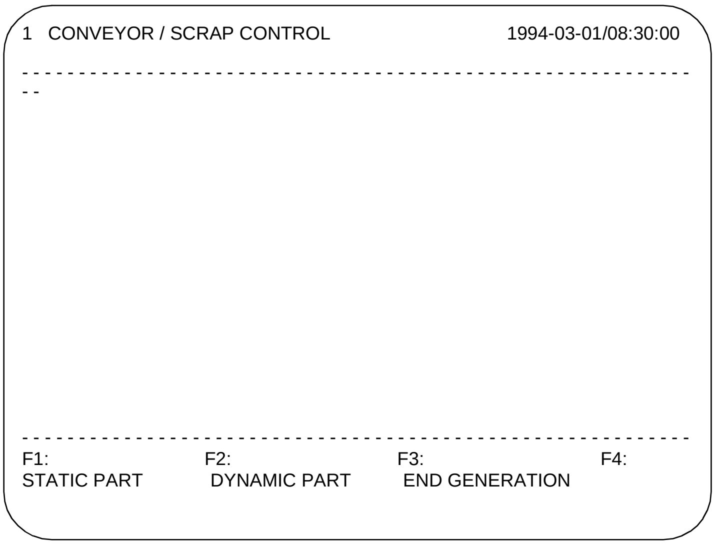
A display cannot be modified or deleted if it is already selected for output or modification at the MasterView 320 terminal.

When a valid name or number is input, you are then asked if you wish to delete the display.

If the answer is YES, a further question is asked for confirmation. If the answer is again YES, the display is deleted and the screen “WELCOME TO ADVANT CONTROLLER” is redisplayed.

If the answer is “NO”, requests for a new display name and title are output in the dialog area. The existing name and title can be left unchanged by pressing <CR>.

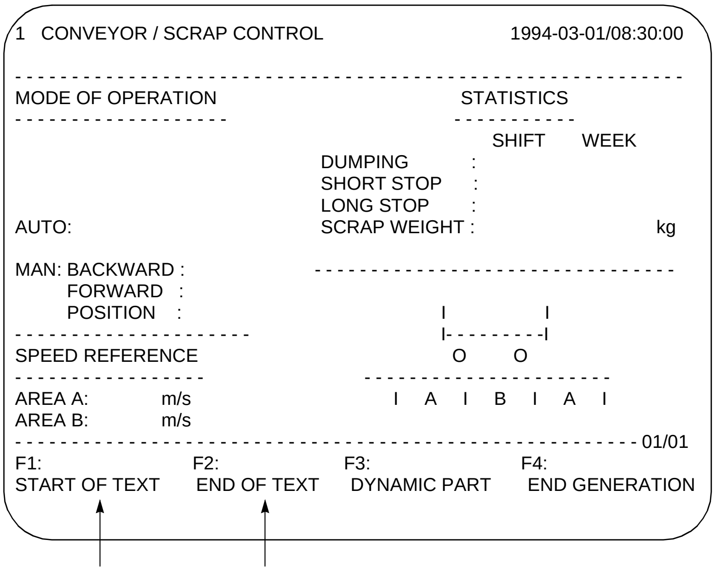
Alternatively, a new name and/or title can be input. When this dialog is complete, the selected display is output to the screen and the function key options are displayed as in the figure to the left. New static texts and dynamic variables can be added to the display as described in Section 5.2 Defining Static Texts and Section 6.3 Modifying Dynamic Variables. Existing texts and variables can be modified as described in Section 6.2 Modifying Static Texts and Section 6.3 Modifying Dynamic Variables.



```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- -











- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                  F2:                    F3:                      F4:
STATIC PART           DYNAMIC PART           END GENERATION
```

6.2 Modifying Static Texts

To redefine a text that has already been defined, position the cursor on any character within the text and press function key F1. The entire text is deleted and a new test can be defined, starting at the current cursor position. To delete an existing text, position the cursor on any character within the text and press function key F1 followed by function key F2. The entre text is deleted from the display.

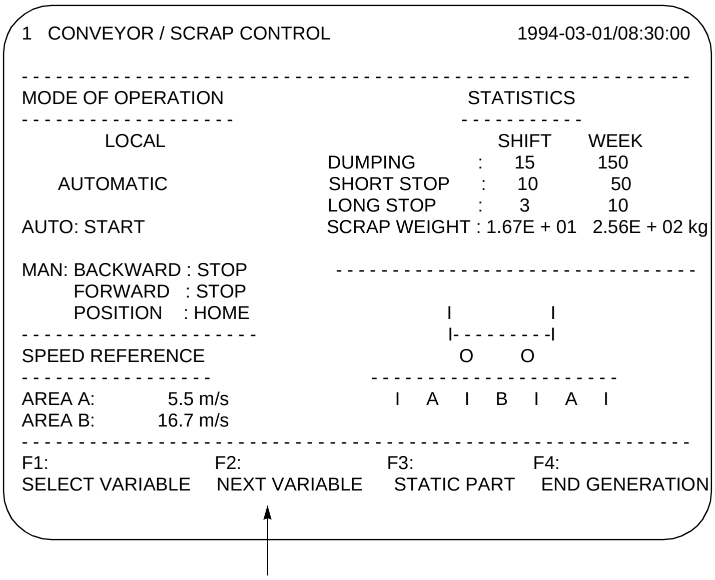


```
1   CONVEYOR / SCRAP CONTROL                                  1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                       STATISTICS
- - - - - - - - - - - - - - - - - -                     - - - - - - - - - - -
                                                            SHIFT       WEEK
                                    DUMPING          :
                                    SHORT STOP       :
                                    LONG STOP        :
AUTO:                               SCRAP WEIGHT :                              kg

MAN: BACKWARD :                     - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       FORWARD   :
       POSITION    :                                    I               I
- - - - - - - - - - - - - - - - - - - -                 I- - - - - - - - -I
SPEED REFERENCE                                           O        O
- - - - - - - - - - - - - - - - -                   - - - - - - - - - - - - - - - - - - - - -
AREA A:            m/s                                  I    A    I    B    I    A    I
AREA B:            m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 01/01
F1:                     F2:                   F3:                      F4:
START OF TEXT      END OF TEXT      DYNAMIC PART      END GENERATION
```

6.3 Modifying Dynamic Variables

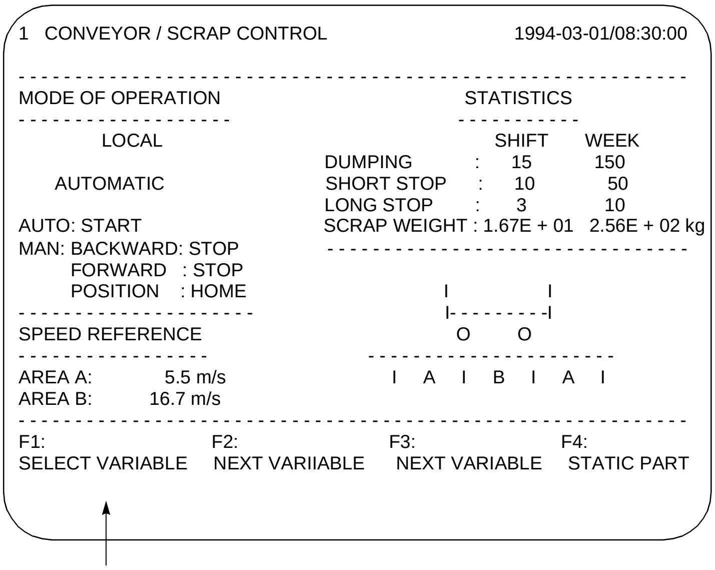
To redefine or delete a dynamic variable that has already been defined, position the cursor on the first (i.e. left most) character of the field in which the variable is displayed.

This can be done by using the cursor positioning keys or by pressing function keyF2. This function key moves the cursor to the next dynamic variable on the screen. That is, the next variable on the same line or, if there is on other variable on the same line, then the first variable on the next line. If there are no variables after the current variable, then the cursor is placed on the upper left most variable.

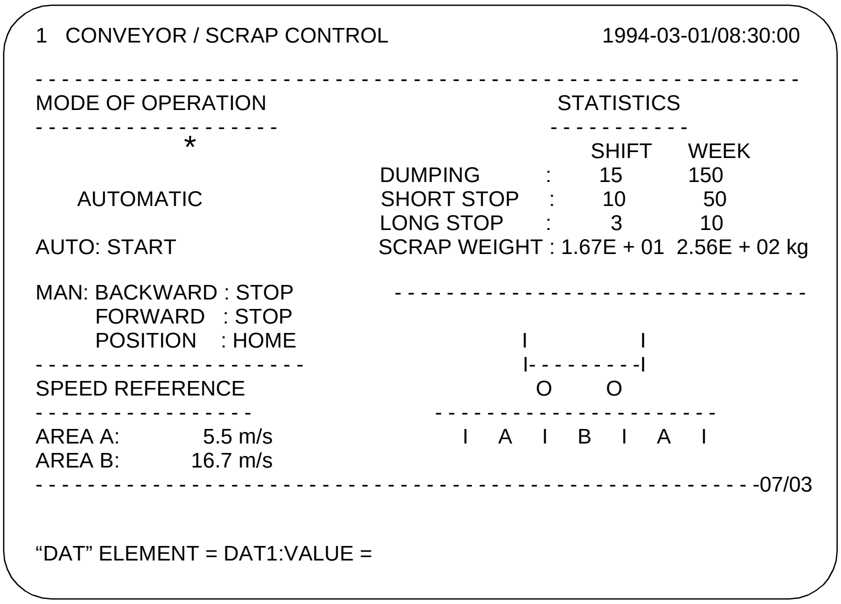


```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                  STATISTICS
- - - - - - - - - - - - -                          - - - - - - - -
           LOCAL                                         SHIFT     WEEK
                                   DUMPING         :    15         150
      AUTOMATIC                    SHORT STOP      :    10          50
                                   LONG STOP       :    3           10
AUTO: START                        SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP                 - - - - - - - - - - - - - - - - - - - -
       FORWARD   : STOP
       POSITION    : HOME                       I            I
- - - - - - - - - - - - - -                     I- - - - - - - -I
SPEED REFERENCE                                   O       O
- - - - - - - - - - -                    - - - - - - - - - - - - - - -
AREA A:             5.5 m/s                 I    A    I    B    I    A    I
AREA B:           16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                    F2:                  F3:                 F4:
SELECT VARIABLE    NEXT VARIABLE     STATIC PART     END GENERATION
```

When the cursor is positioned on the variable to be changed, press function key F1. An asterisk (*) will replace the variable on the screen and the existing area, along with the current data type of the variable.



```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                  STATISTICS
- - - - - - - - - - - - -                          - - - - - - - -
           LOCAL                                         SHIFT     WEEK
                                   DUMPING         :    15         150
      AUTOMATIC                    SHORT STOP      :    10          50
                                   LONG STOP       :    3           10
AUTO: START                        SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg
MAN: BACKWARD: STOP                  - - - - - - - - - - - - - - - - - - - -
       FORWARD   : STOP
       POSITION    : HOME                       I            I
- - - - - - - - - - - - - -                     I- - - - - - - -I
SPEED REFERENCE                                   O       O
- - - - - - - - - - -                    - - - - - - - - - - - - - - -
AREA A:             5.5 m/s                 I    A    I    B    I    A    I
AREA B:          16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                    F2:                   F3:                   F4:
SELECT VARIABLE    NEXT VARIIABLE     NEXT VARIABLE     STATIC PART
```



```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                    STATISTICS
- - - - - - - - - - - - - - - - - -                  - - - - - - - - - - -
             *                                         SHIFT    WEEK
                              DUMPING        :       15        150
   AUTOMATIC                  SHORT STOP     :       10         50
                              LONG STOP      :        3         10
AUTO: START                   SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP          - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD  : STOP
     POSITION : HOME                      I          I
- - - - - - - - - - - - - - - - - - - -   I- - - - - - - - -I
SPEED REFERENCE                             O     O
- - - - - - - - - - - - - - - - -    - - - - - - - - - - - - - - - - - - - - -
AREA A:          5.5 m/s               I   A   I   B   I   A   I
AREA B:         16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -07/03


"DAT" ELEMENT = DAT1:VALUE =
```

Figure 6-1. Modifying of dynamic variable

If the DAT element identity is to remain the same, press <CR>. Otherwise, enter the new element identity.

If the element is the same or if it has the same data type as the previous identity, then the same questions will be asked as when the variable was first defined.

In each question, the existing value will be displayed. The value can be left unchanged by pressing <CR>, or a new value can be input.

If the data type of the new DAT element is not the same as the previous element, then the old answers are discarded and a new set of questions are asked, depending on the data type of the element.

When the existing DAT element identity is displayed, enter "." followed by <CR> to delete a dynamic variable. This will delete the variable from this position on the screen. The cursor will stay in the same place as the deleted variable.

Chapter 7 Event Handling

7.1 General

Events received by the MasterView 320 are immediately displayed on the second line of the screen. If required, the event can be simultaneously printed on the printer and/or saved in a list.

Each event consists of a string of 80 characters (the width of the screen) and is sent to the MasterView 320 using the PC element EVENT. The EVENT element can send two types of event: a “normal” event and a “dialog” event. A “normal” event always contains the date and time and can be printed and/or stored in the list. A “dialog” event is for use in carrying out a dialog with the operator. This type of event does not contain the date and time and cannot be printed on the printer or stored in the list.

An event (of either type) stays displayed on line 2 until explicitly cleared. Whenever the normal display is refreshed, the latest event is redisplayed. The event can be cleared in one of two ways, either by overwriting it with the next received event or by sending an “empty” dialog event. This event just contains an empty string and because it is a dialog event, it is not stored in the list.

See the PC Elements manual for more information on the EVENT element.

Parameters for event handling are held in data base element TERMPAR (see Section 4.9 Data Base Element TERMPAR).

If a list of events is to be maintained, then the terminal EV_LIST must be set to 1 in TERMPAR. The number of events to be held in the list is specified by NUM_EV, which is also in TERMPAR. The maximum possible value for the number of events is 100. The event list is created when the MasterView 320 is first started. Once created, the event list is not created again unless the value changes in TERMPAR:NUM_EV and the MasterView 320 is restarted. If this happens, the old event list is discarded and a new one is created.

If TERMPAR:EV_LIST is changed from 1 to 0 the event list is discarded the next time the MasterView 320 is restarted.

If TERMPAR:EV_LIST is then changed back from 0 to 1, a completely new event list is created the next time the MasterView 320 is restarted.

When the event list becomes full, the oldest event in the list is overwritten by the newest event. The event list remains intact even if the MasterView 320 or the Controller is restarted.

If the system is cleared (coldstarted) or the Advant Station 120 Series command RECONFIG is performed, the event list is lost.

If each received event is to be automatically printed, the terminal PRI_EV must be set to 1 in data base element TERMPAR. The printer used is the standard printer connected to this node. The printer must first be activated before anything can be printed. See Section 8.4 Printing a Display.

Chapter 8 Operation

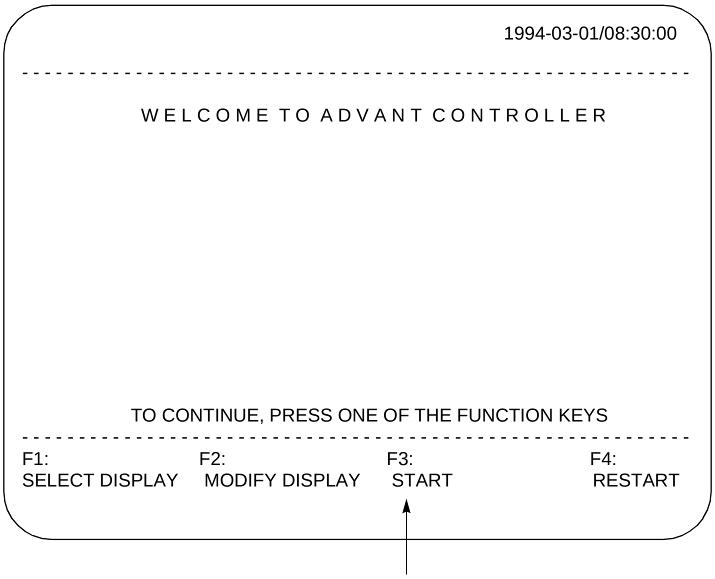
8.1 General

You can select a display for output to the MasterView 320 terminal two ways. Either by using a PC program (see chapter 10) or by specifying its name or number on the MasterView 320 terminal.

A display can be output at more than one MasterView 320 terminal at the same time. This means that a DAT element value can be modified from two different places at (almost) the same time. A display cannot be output if it is created or modified at another MasterView 320 terminal.

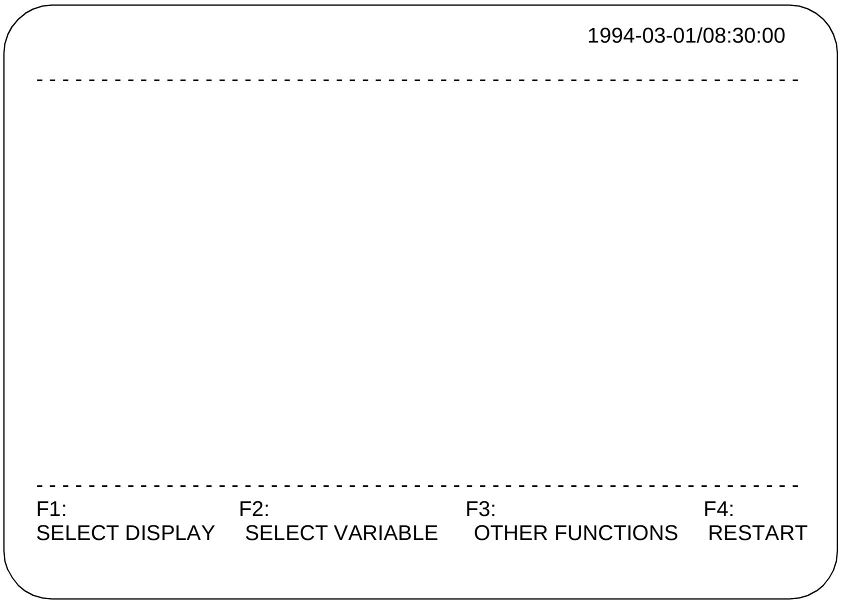
When a display is on the screen, it is possible to modify any of the dynamic variables marked as changeable.

To select a display for output, press function key F3.



```
                                                  1994-03-01/08:30:00
---------------------------------------------------------------------
                   WELCOME TO ADVANT CONTROLLER




             TO CONTINUE, PRESS ONE OF THE FUNCTION KEYS
---------------------------------------------------------------------
F1:               F2:               F3:                F4:
SELECT DISPLAY    MODIFY DISPLAY    START              RESTART
```

If a display has been selected by a PC program, it is automatically output along with the function key options (Figure 8-1). If no display is selected by a PC program, only the function key options are output.

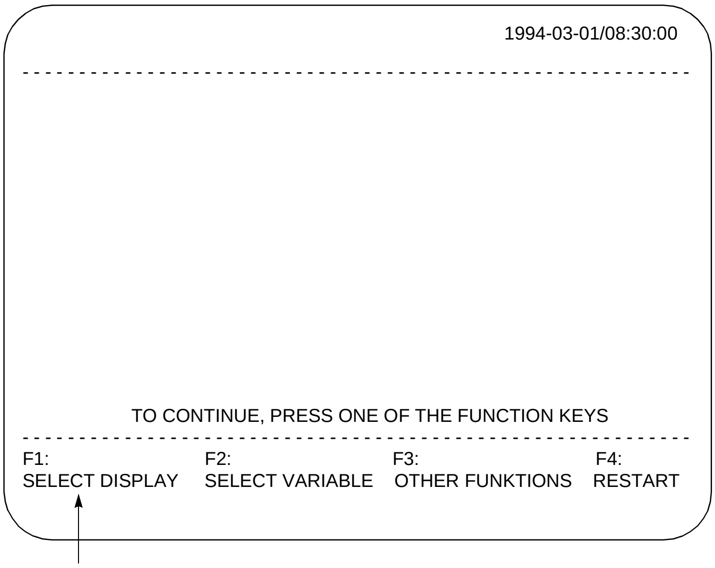


```
                                                  1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                F2:                  F3:                    F4:
SELECT DISPLAY     SELECT VARIABLE      OTHER FUNCTIONS        RESTART
```

Figure 8-1. Screen when no display has been selected by a PC program

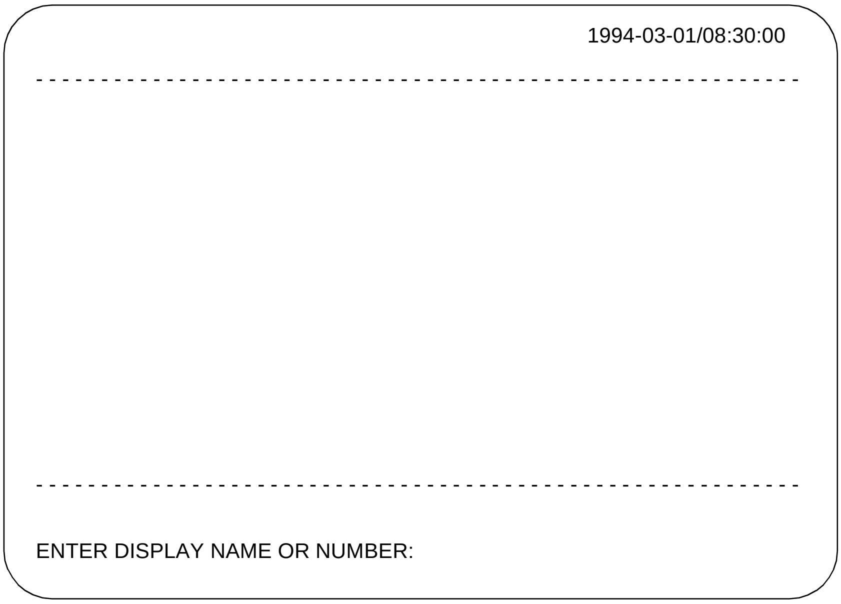
8.2 Selecting Displays

To select a display for output, press function key F1.



```
                                                  1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

              TO CONTINUE, PRESS ONE OF THE FUNCTION KEYS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                F2:                  F3:                    F4:
SELECT DISPLAY     SELECT VARIABLE      OTHER FUNKTIONS        RESTART
```

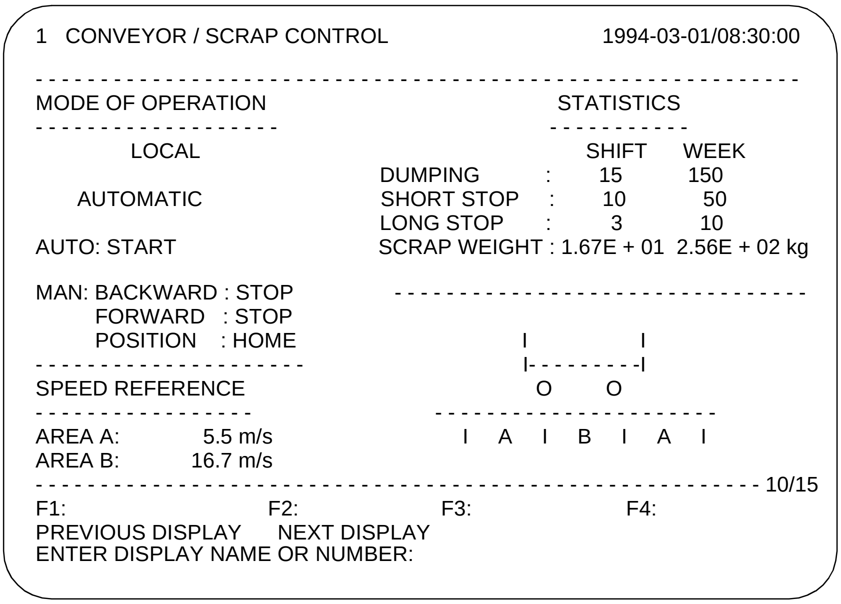
A request for a display name or number will be output in the dialog area:



```
                                                  1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -












- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

ENTER DISPLAY NAME OR NUMBER:
```

Figure 8-2. Selection of a display when is no display already

If there is a display currently on the screen, two extra function key options will also be displayed:



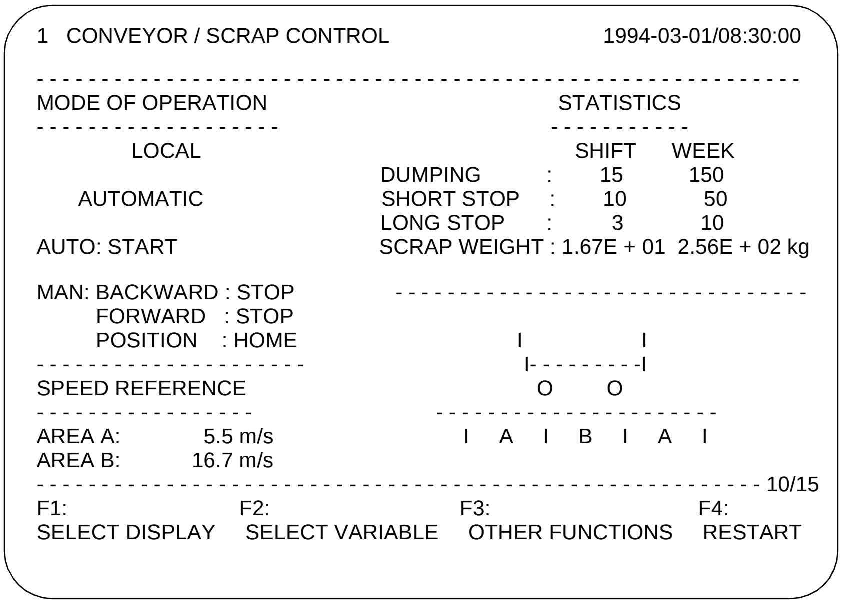
```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                    STATISTICS
- - - - - - - - - - - - - - - - - - -                - - - - - - - - - - -
           LOCAL                                        SHIFT     WEEK
                                    DUMPING        :     15        150
      AUTOMATIC                     SHORT STOP     :     10         50
                                    LONG STOP      :      3         10
AUTO: START                         SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP               - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       FORWARD   : STOP
       POSITION    : HOME                         I              I
- - - - - - - - - - - - - - - - - - - - -         I- - - - - - - - -I
SPEED REFERENCE                                      O       O
- - - - - - - - - - - - - - - - -                - - - - - - - - - - - - - - - - - - - - - -
AREA A:            5.5 m/s                          I    A    I    B    I    A    I
AREA B:           16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 10/15
F1:                         F2:                  F3:                   F4:
PREVIOUS DISPLAY      NEXT DISPLAY
ENTER DISPLAY NAME OR NUMBER:
```

Figure 8-3. Selection of a display when there is a display already

If a display is currently on the screen, the next or previous display can be selected by pressing function keys F1 or F2.

Example: If display number 5 is currently on the screen, F1 will select display number 4 for output; F2 will select display number 6.

When a display (for example number 1) has been successfully selected, it is displayed on the screen:



```
1   CONVEYOR / SCRAP CONTROL                               1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                      STATISTICS
- - - - - - - - - - - - - - - - - -                    - - - - - - - - - - -
          LOCAL                                          SHIFT     WEEK
                                   DUMPING        :       15        150
     AUTOMATIC                     SHORT STOP     :       10         50
                                   LONG STOP      :        3         10
AUTO: START                        SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP               - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD  : STOP
     POSITION : HOME                           I              I
- - - - - - - - - - - - - - - - - - - -        I- - - - - - - - -I
SPEED REFERENCE                                   O       O
- - - - - - - - - - - - - - - -              - - - - - - - - - - - - - - - - - - - - -
AREA A:          5.5 m/s                        I    A    I    B    I    A    I
AREA B:         16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 10/15
F1:                 F2:                 F3:                        F4:
SELECT DISPLAY    SELECT VARIABLE    OTHER FUNCTIONS    RESTART
```

Figure 8-4. Selected display

Dynamic variables are displayed according to the specified field width. In the case of integers and real numbers; if the value of the field width is too small to display the whole number, the field is filled with asterisks (“*”).

For boolean and character (integer long) data types, all characters are always displayed.

When a real number is displayed in nonexponential format; if the value of the number exceeds 1 million, the value is temporarily displayed in exponential format.

8.3 Modifying Dynamic Variables

If the display on the screen contains dynamic variables, they can be modified if they are defined as changeable by the operator← → ↓ ↑.

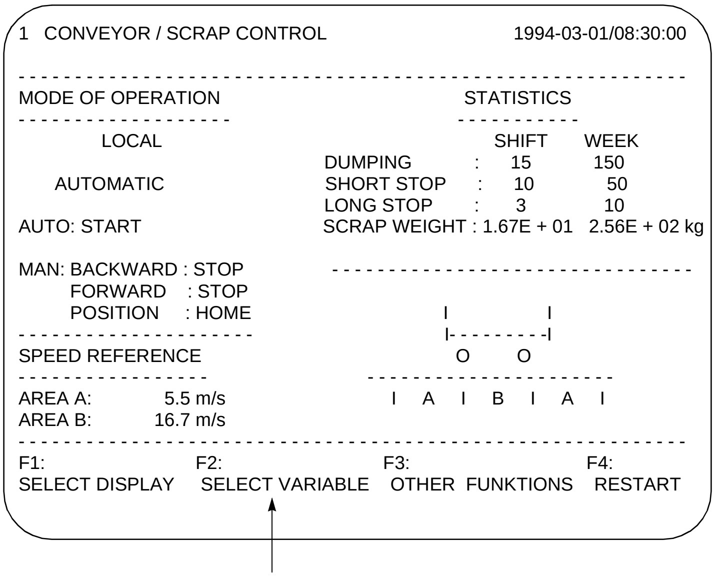
NOTE

If the same display is shown on two MasterView 320 terminals at the same time, it is possible to change the same dynamic variable on each terminal.

To modify a variable, first position the cursor on that variable. When a display is first output, the cursor is positioned on the variable which was specified as the “home cursor position” when the display was generated. To move the cursor to other variables, use the cursor positioning keys:

→	Moves the cursor to the next changeable variable.
←	Moves the cursor to the previous changeable variable.
↓	Moves the cursor to the first changeable variable on the next line.
↑	Moves the cursor to the last changeable variable on the previous line.

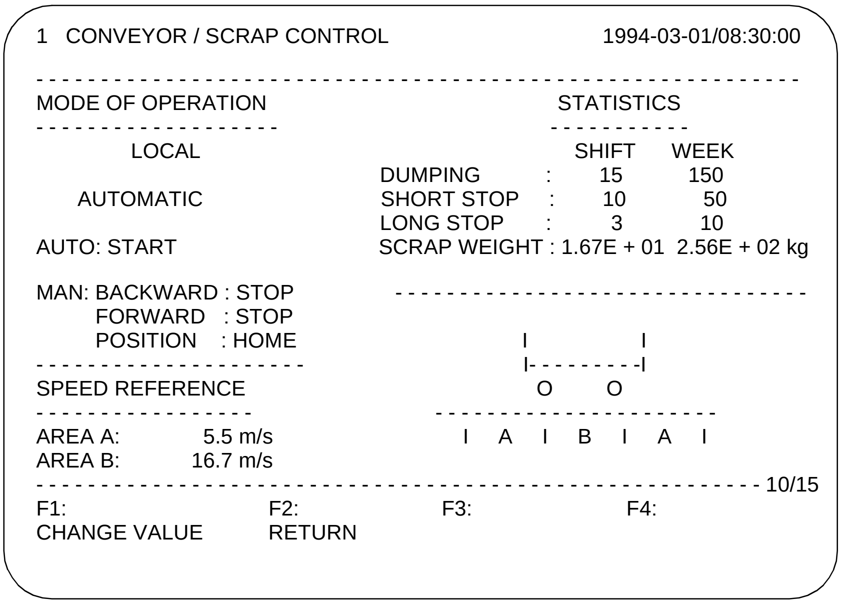
When the cursor is positioned, press F2.



```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                      STATISTICS
- - - - - - - - - - - - - - - - - - -                  - - - - - - - - - - -
          LOCAL                                             SHIFT     WEEK
                                   DUMPING        :     15         150
     AUTOMATIC                     SHORT STOP     :     10          50
                                   LONG STOP      :      3          10
AUTO: START                        SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP                 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        FORWARD   : STOP
        POSITION    : HOME                          I              I
- - - - - - - - - - - - - - - - - - - - -           I- - - - - - - - -I
SPEED REFERENCE                                       O       O
- - - - - - - - - - - - - - - - -               - - - - - - - - - - - - - - - - - - - - - -
AREA A:            5.5 m/s                    I   A   I   B   I   A   I
AREA B:           16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                     F2:                        F3:                        F4:
SELECT DISPLAY     SELECT VARIABLE    OTHER  FUNKTIONS    RESTART
```

The variable in question is highlighted with underscore and a request for a new value is output in the dialog area. The request varies depending on the data type of the variable.

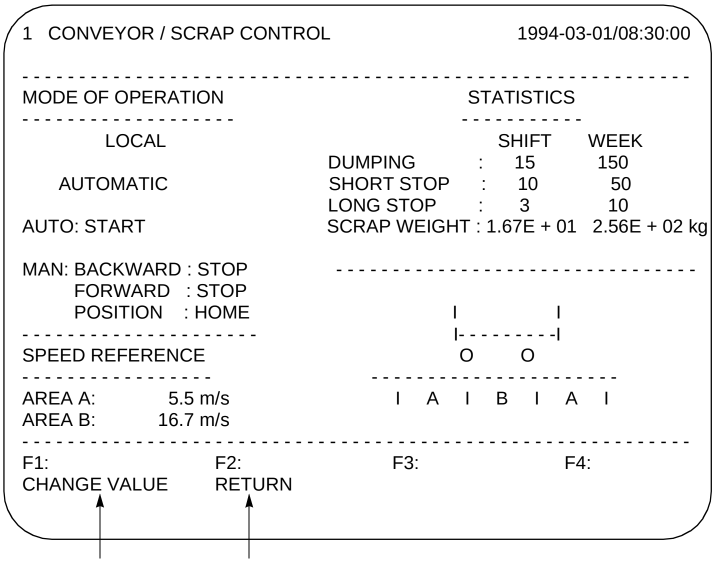
If the data type of the variable is boolean, there are two function key options:



```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                   STATISTICS
- - - - - - - - - - - - - - - - - -                 - - - - - - - - - - -
          LOCAL                                       SHIFT     WEEK
                                 DUMPING         :      15        150
     AUTOMATIC                   SHORT STOP      :      10         50
                                 LONG STOP       :       3         10
AUTO: START                      SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP              - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD  : STOP
     POSITION : HOME                       I            I
- - - - - - - - - - - - - - - - - - - -     I- - - - - - - - -I
SPEED REFERENCE                              O      O
- - - - - - - - - - - - - - - - -        - - - - - - - - - - - - - - - - - - - - - -
AREA A:          5.5 m/s                  I   A   I   B   I   A   I
AREA B:         16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - 10/15
F1:                F2:              F3:                F4:
CHANGE VALUE       RETURN
```

Figure 8-5. Modifying dynamic variables

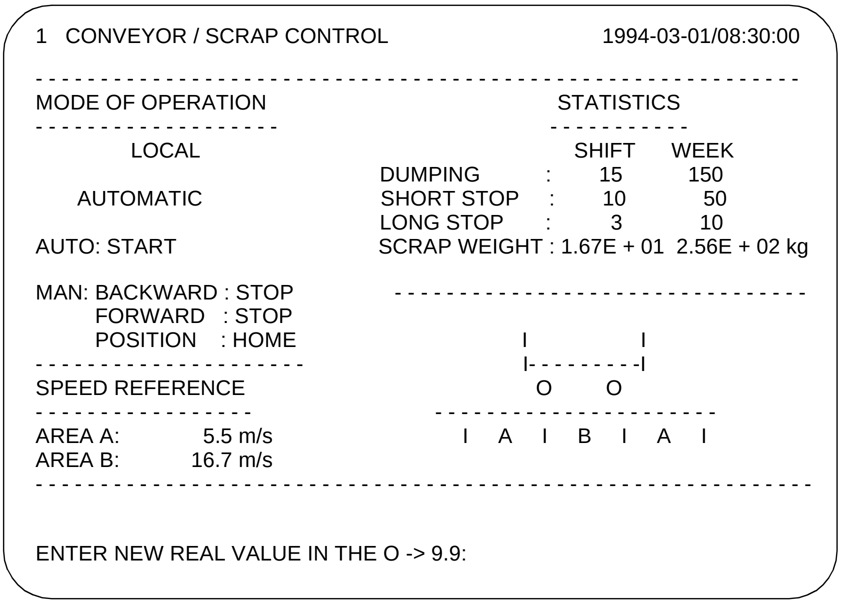
To change the value of a boolean variable to its opposite value, press function key F1.



```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                   STATISTICS
- - - - - - - - - - - - - - - - - -                 - - - - - - - - - - -
          LOCAL                                       SHIFT     WEEK
                                 DUMPING         :      15        150
     AUTOMATIC                   SHORT STOP      :      10         50
                                 LONG STOP       :       3         10
AUTO: START                      SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP              - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD  : STOP
     POSITION : HOME                       I            I
- - - - - - - - - - - - - - - - - - - -     I- - - - - - - - -I
SPEED REFERENCE                              O      O
- - - - - - - - - - - - - - - - -        - - - - - - - - - - - - - - - - - - - - - -
AREA A:          5.5 m/s                  I   A   I   B   I   A   I
AREA B:         16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                F2:              F3:                F4:
CHANGE VALUE       RETURN
```

To return to the previous function key options, press function key F2.

If the data type of the variable is integer or real, a prompt is output asking for a new value. The prompt contains the minimum and maximum values (if any) that are allowed for the new value. If the variable is a real number, the new value can be input in either exponential or nonexponential format. When a new value has been input, the previous function key options are redisplayed.



```
1   CONVEYOR / SCRAP CONTROL                          1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                       STATISTICS
- - - - - - - - - - - - - - - - - -                     - - - - - - - - - - -
            LOCAL                                          SHIFT     WEEK
                                   DUMPING        :       15          150
       AUTOMATIC                   SHORT STOP     :       10           50
                                   LONG STOP      :        3           10
AUTO: START                        SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP                 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        FORWARD   : STOP
        POSITION    : HOME                        I                I
- - - - - - - - - - - - - - - - - - - -           I- - - - - - - - -I
SPEED REFERENCE                                     O         O
- - - - - - - - - - - - - - - - -               - - - - - - - - - - - - - - - - - - - - -
AREA A:             5.5 m/s                  I    A    I    B    I    A    I
AREA B:           16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


ENTER NEW REAL VALUE IN THE O -> 9.9:
```

Figure 8-6. The function keys options

8.4 Printing a Display

A copy of the display currently on the screen can be printed on the printer attached to this Controller. This can be done by pressing the < - >key on the keyboard (the keyboard must be in application mode, not numeric mode).

If there is no display on the screen at the time the key is pressed, the bell is sounded and nothing is printed.

NOTE

This is not a “hardcopy” facility since the printed display contains the values of the variables as they currently exist in the database. The values of the variables on the screen may be different if they are not cyclically updated.

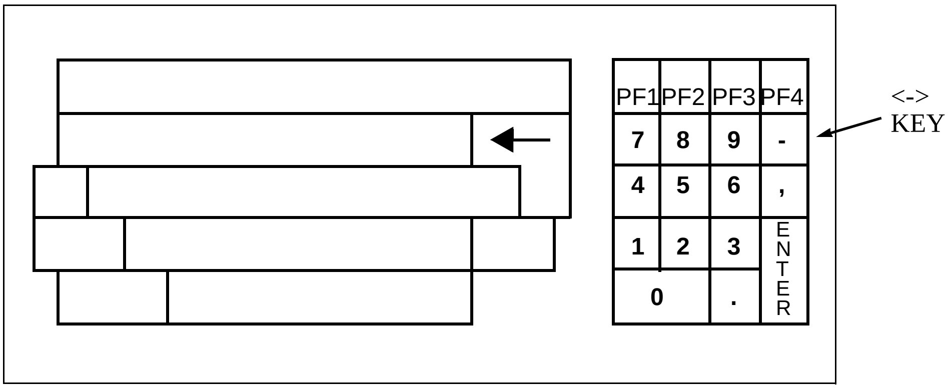


Figure 8-7. Special keys on the keyboard

You can also print the display by using a PC program. See Section 10.3 Printing Displays.

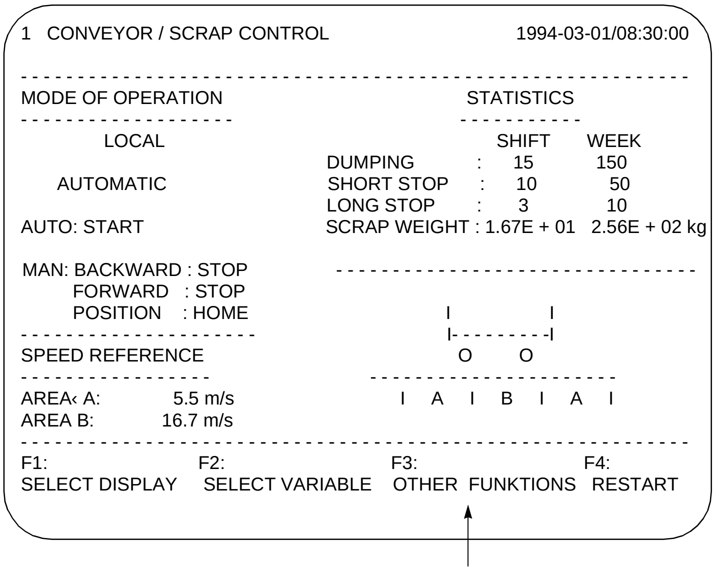
The printer must have been previously activated using the Modify Data Base command MDB on the Advant Station 100 Series Engineering Station. The DB element is called PRI _01.

NOTE

If you have set the keyboard to numeric mode instead of application mode, the < - > key does not print the display. See DB element TERMPAR, input COMSEQ (Section 4.9 Data Base Element TERMPAR). You can then order printout by means of a PC program (see Section 10.3 Printing Displays).

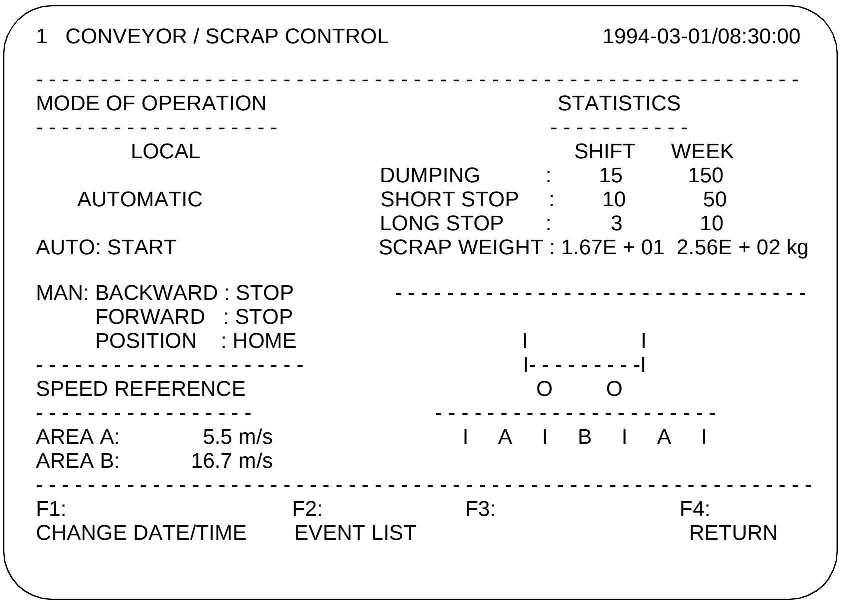
8.5 Changing Date and Time

When a display is on the screen, there are some other functions available which can be used by pressing function key F3.



```
1   CONVEYOR / SCRAP CONTROL                                   1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                        STATISTICS
- - - - - - - - - - - - - - - - - - -                    - - - - - - - - - - -
           LOCAL                                              SHIFT      WEEK
                                         DUMPING        :      15          150
      AUTOMATIC                          SHORT STOP     :      10           50
                                         LONG STOP      :       3           10
AUTO: START                              SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP                      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       FORWARD   : STOP
       POSITION    : HOME                                  I               I
- - - - - - - - - - - - - - - - - - - - -                  I- - - - - - - - -I
SPEED REFERENCE                                              O        O
- - - - - - - - - - - - - - - - -                   - - - - - - - - - - - - - - - - - - - - - -
AREA‹ A:            5.5 m/s                           I    A    I    B    I    A    I
AREA B:           16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                       F2:                       F3:                        F4:
SELECT DISPLAY     SELECT VARIABLE     OTHER  FUNKTIONS   RESTART
```

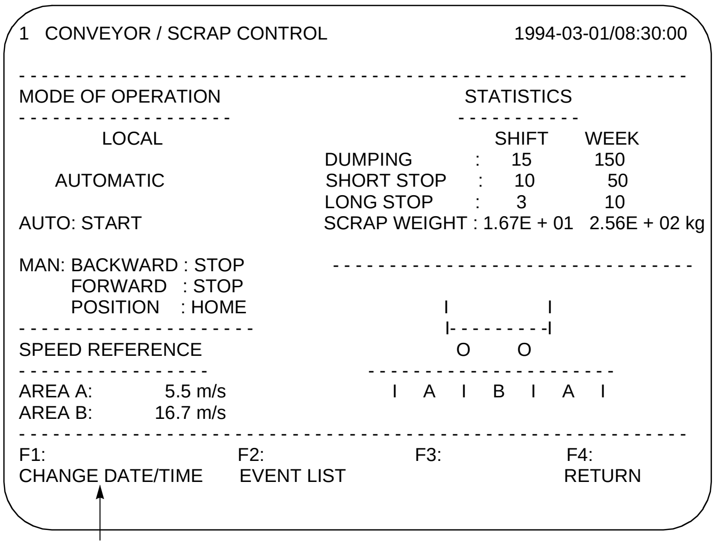
The following screen is displayed:



```
1   CONVEYOR / SCRAP CONTROL                                   1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                        STATISTICS
- - - - - - - - - - - - - - - - - - -                    - - - - - - - - - - -
           LOCAL                                              SHIFT      WEEK
                                         DUMPING        :      15          150
      AUTOMATIC                          SHORT STOP     :      10           50
                                         LONG STOP      :       3           10
AUTO: START                              SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP                      - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
       FORWARD   : STOP
       POSITION    : HOME                                  I               I
- - - - - - - - - - - - - - - - - - - - -                  I- - - - - - - - -I
SPEED REFERENCE                                              O        O
- - - - - - - - - - - - - - - - -                   - - - - - - - - - - - - - - - - - - - - - -
AREA A:             5.5 m/s                           I    A    I    B    I    A    I
AREA B:           16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                         F2:                 F3:                        F4:
CHANGE DATE/TIME       EVENT LIST                                          RETURN
```

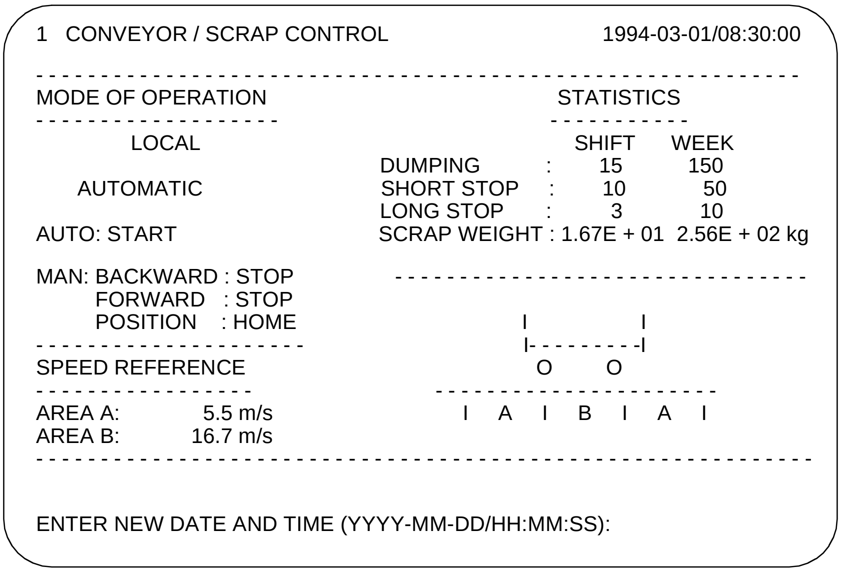
Figure 8-8. Dialog for other functions

If a GENPER terminal in data base element TERMPAR is set to 0, the date and time cannot be changed. In this case, the option for function key F1 in Figure 8-8 is not given. To change the date and time, press function key F1.



```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                        STATISTICS
- - - - - - - - - - - - - - - - - -                      - - - - - - - - - - -
            LOCAL                                            SHIFT      WEEK
                                      DUMPING          :      15         150
      AUTOMATIC                       SHORT STOP       :      10          50
                                      LONG STOP        :      3           10
AUTO: START                           SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP                  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        FORWARD   : STOP
        POSITION    : HOME                         I               I
- - - - - - - - - - - - - - - - - - - -            I- - - - - - - - -I
SPEED REFERENCE                                     O        O
- - - - - - - - - - - - - - - - -         - - - - - - - - - - - - - - - - - - - - -
AREA A:            5.5 m/s                  I    A    I    B    I    A    I
AREA B:          16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                        F2:                    F3:                   F4:
CHANGE DATE/TIME      EVENT LIST                                        RETURN
```

A request for a new date and time is output in the dialog area. If the date and time are not to be changed, press <CR>. The screen in Figure 8-8 is redisplayed.

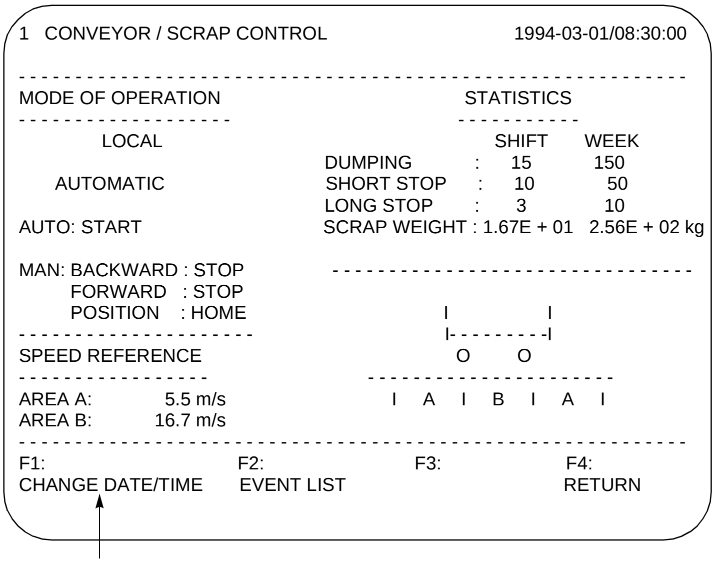


```
1   CONVEYOR / SCRAP CONTROL                              1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                        STATISTICS
- - - - - - - - - - - - - - - - - - -                    - - - - - - - - - - -
            LOCAL                                            SHIFT      WEEK
                                      DUMPING          :      15         150
      AUTOMATIC                       SHORT STOP       :      10          50
                                      LONG STOP        :       3          10
AUTO: START                           SCRAP WEIGHT : 1.67E + 01  2.56E + 02 kg

MAN: BACKWARD : STOP                  - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        FORWARD   : STOP
        POSITION    : HOME                         I               I
- - - - - - - - - - - - - - - - - - - -            I- - - - - - - - -I
SPEED REFERENCE                                     O        O
- - - - - - - - - - - - - - - - -         - - - - - - - - - - - - - - - - - - - - - -
AREA A:            5.5 m/s                  I    A    I    B    I    A    I
AREA B:          16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


ENTER NEW DATE AND TIME (YYYY-MM-DD/HH:MM:SS):
```

Figure 8-9. New dare and time

The new date and time must be input in full and in the same format as that displayed in the top right hand corner of the screen.i.e. YYYY-MM-DD/HH:MM:SS, followed by <CR>.

If the new data and valid, the screen in Figure 8-8 is redisplayed.



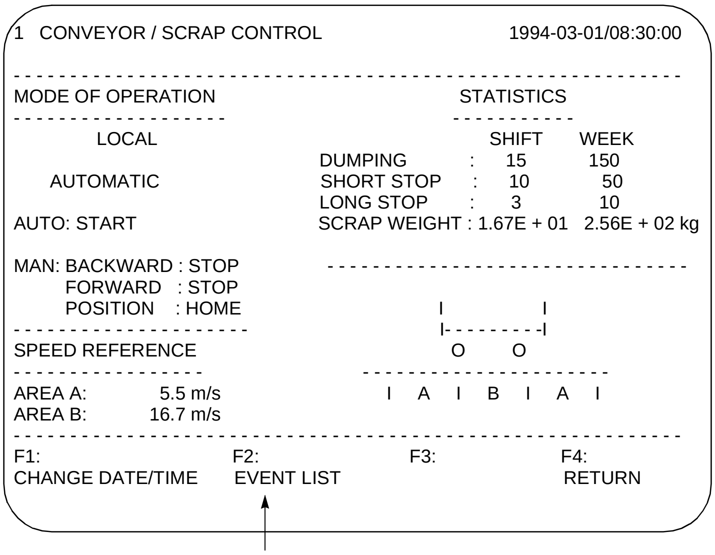
```
1   CONVEYOR / SCRAP CONTROL                                   1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                          STATISTICS
- - - - - - - - - - - - - - - - - -                        - - - - - - - - - - -
            LOCAL                                               SHIFT      WEEK
                                         DUMPING          :     15          150
      AUTOMATIC                          SHORT STOP       :     10           50
                                         LONG STOP        :      3           10
AUTO: START                              SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP                    - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
        FORWARD   : STOP
        POSITION    : HOME                            I                I
- - - - - - - - - - - - - - - - - - - -               I- - - - - - - - -I
SPEED REFERENCE                                          O       O
- - - - - - - - - - - - - - - -                  - - - - - - - - - - - - - - - - - - - - -
AREA A:             5.5 m/s                       I    A    I    B    I    A    I
AREA B:            16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                          F2:                     F3:                    F4:
CHANGE DATE/TIME       EVENT LIST                                           RETURN
```

NOTE

When a valid date and time are input, the system time in the Controller is also changed. If the Controller is connected via MasterBus to other controllers or operator stations, the system time in those systems is also changed.

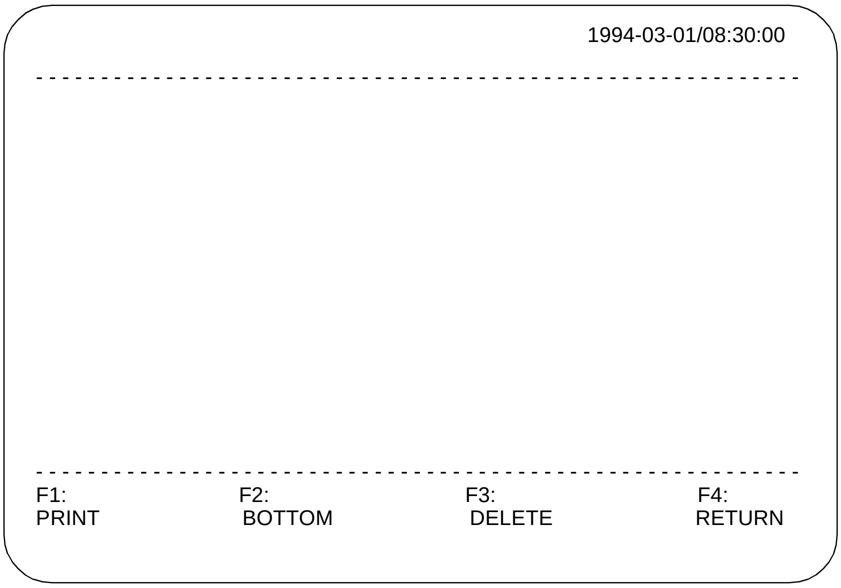
8.6 Displaying the Event List

If the EV_LIST terminal in data base element TERMPAR is set to 0 there is no event list, neither is the option for function key F2 given.



```
1   CONVEYOR / SCRAP CONTROL                         1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
MODE OF OPERATION                                   STATISTICS
- - - - - - - - - - - - - - - - - -                 - - - - - - - - - - -
         LOCAL                                         SHIFT      WEEK
                                  DUMPING        :     15          150
     AUTOMATIC                    SHORT STOP     :     10           50
                                  LONG STOP      :     3            10
AUTO: START                       SCRAP WEIGHT : 1.67E + 01   2.56E + 02 kg

MAN: BACKWARD : STOP               - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
     FORWARD   : STOP
     POSITION  : HOME                           I              I
- - - - - - - - - - - - - - - - - - - -         I- - - - - - - - -I
SPEED REFERENCE                                   O        O
- - - - - - - - - - - - - - - -          - - - - - - - - - - - - - - - - - - - - -
AREA A:          5.5 m/s                    I    A    I    B    I    A    I
AREA B:         16.7 m/s
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                     F2:                 F3:                 F4:
CHANGE DATE/TIME        EVENT LIST                              RETURN
```

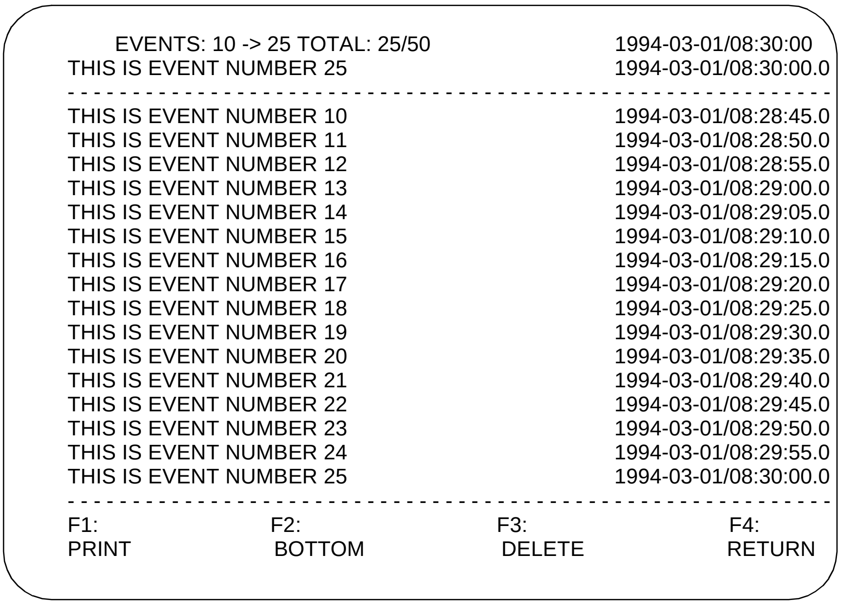
If the event list is enabled, but there is no event list, then pressing function key F2 causes a blank display to be output:



```
                                                          1994-03-01/08:30:00
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -











- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                 F2:                    F3:                     F4:
PRINT               BOTTOM                 DELETE                  RETURN
```

Figure 8-10. Blank display

If the event list is enabled and there is an event list, then pressing function key F2 causes the latest 16 events in the event list to be displayed on the screen:

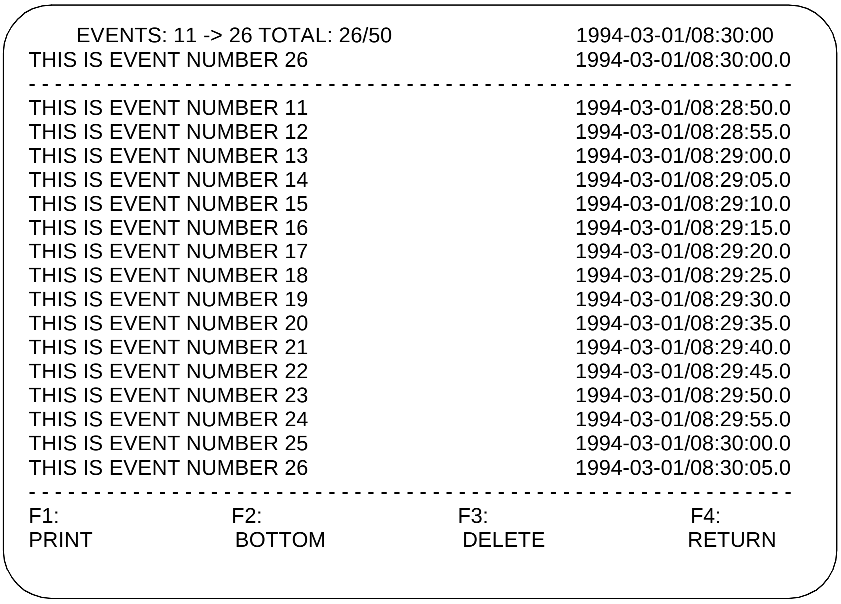


```
    EVENTS: 10 -> 25 TOTAL: 25/50                     1994-03-01/08:30:00
THIS IS EVENT NUMBER 25                               1994-03-01/08:30:00.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
THIS IS EVENT NUMBER 10                               1994-03-01/08:28:45.0
THIS IS EVENT NUMBER 11                               1994-03-01/08:28:50.0
THIS IS EVENT NUMBER 12                               1994-03-01/08:28:55.0
THIS IS EVENT NUMBER 13                               1994-03-01/08:29:00.0
THIS IS EVENT NUMBER 14                               1994-03-01/08:29:05.0
THIS IS EVENT NUMBER 15                               1994-03-01/08:29:10.0
THIS IS EVENT NUMBER 16                               1994-03-01/08:29:15.0
THIS IS EVENT NUMBER 17                               1994-03-01/08:29:20.0
THIS IS EVENT NUMBER 18                               1994-03-01/08:29:25.0
THIS IS EVENT NUMBER 19                               1994-03-01/08:29:30.0
THIS IS EVENT NUMBER 20                               1994-03-01/08:29:35.0
THIS IS EVENT NUMBER 21                               1994-03-01/08:29:40.0
THIS IS EVENT NUMBER 22                               1994-03-01/08:29:45.0
THIS IS EVENT NUMBER 23                               1994-03-01/08:29:50.0
THIS IS EVENT NUMBER 24                               1994-03-01/08:29:55.0
THIS IS EVENT NUMBER 25                               1994-03-01/08:30:00.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:              F2:               F3:                 F4:
PRINT            BOTTOM            DELETE              RETURN
```

Figure 8-11. Event list

In the example in Figure 8-11, a total of 25 events are held in an event list which can hold up to 50 events. The latest 16 events are displayed on the screen i.e. events 10 to 25. The latest received event (number 25) is already displayed on line 2.

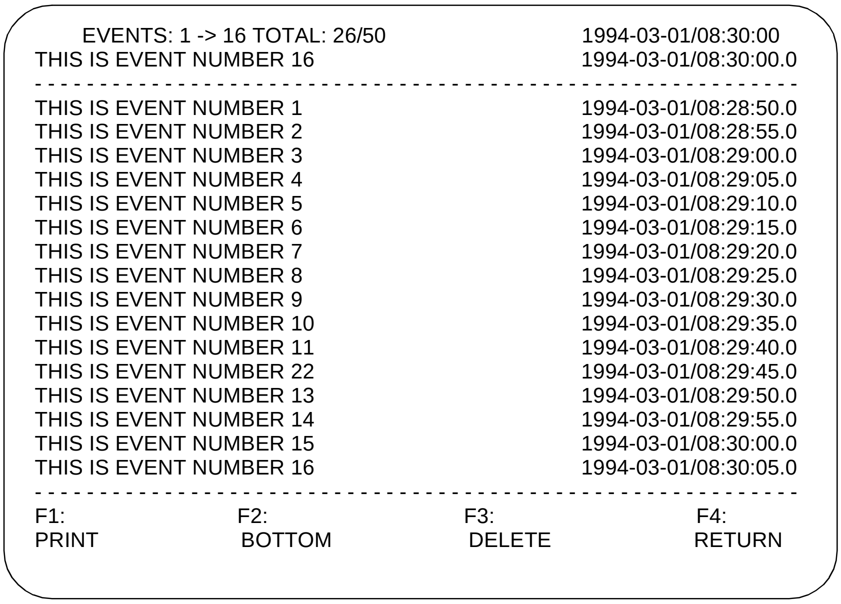
If a new event is received while the list is displayed on the screen, it is displayed on line 2 and then inserted into the list. This means that events 11 to 26 will be displayed on the screen.



```
    EVENTS: 11 -> 26 TOTAL: 26/50                     1994-03-01/08:30:00
THIS IS EVENT NUMBER 26                               1994-03-01/08:30:00.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
THIS IS EVENT NUMBER 11                               1994-03-01/08:28:50.0
THIS IS EVENT NUMBER 12                               1994-03-01/08:28:55.0
THIS IS EVENT NUMBER 13                               1994-03-01/08:29:00.0
THIS IS EVENT NUMBER 14                               1994-03-01/08:29:05.0
THIS IS EVENT NUMBER 15                               1994-03-01/08:29:10.0
THIS IS EVENT NUMBER 16                               1994-03-01/08:29:15.0
THIS IS EVENT NUMBER 17                               1994-03-01/08:29:20.0
THIS IS EVENT NUMBER 18                               1994-03-01/08:29:25.0
THIS IS EVENT NUMBER 19                               1994-03-01/08:29:30.0
THIS IS EVENT NUMBER 20                               1994-03-01/08:29:35.0
THIS IS EVENT NUMBER 21                               1994-03-01/08:29:40.0
THIS IS EVENT NUMBER 22                               1994-03-01/08:29:45.0
THIS IS EVENT NUMBER 23                               1994-03-01/08:29:50.0
THIS IS EVENT NUMBER 24                               1994-03-01/08:29:55.0
THIS IS EVENT NUMBER 25                               1994-03-01/08:30:00.0
THIS IS EVENT NUMBER 26                               1994-03-01/08:30:05.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:              F2:               F3:                 F4:
PRINT            BOTTOM            DELETE              RETURN
```

Figure 8-12. New event in the event list

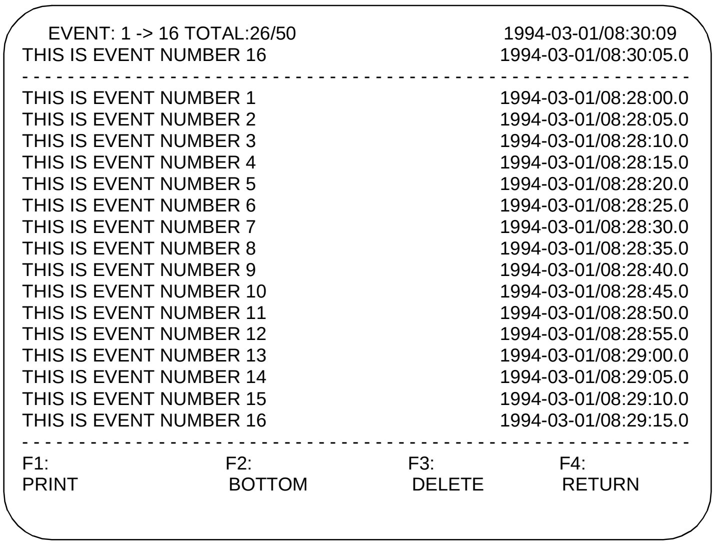
To display older events, press the “up arrow” key ↑. The event list scrolls down by one line for each depression of the key. When the oldest event is displayed on the screen, the “up arrow” key has no further effect. To scroll the event list back towards the latest event, press the “down arrow” key ↓.



```
    EVENTS: 1 -> 16 TOTAL: 26/50                    1994-03-01/08:30:00
THIS IS EVENT NUMBER 16                             1994-03-01/08:30:00.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
THIS IS EVENT NUMBER 1                              1994-03-01/08:28:50.0
THIS IS EVENT NUMBER 2                              1994-03-01/08:28:55.0
THIS IS EVENT NUMBER 3                              1994-03-01/08:29:00.0
THIS IS EVENT NUMBER 4                              1994-03-01/08:29:05.0
THIS IS EVENT NUMBER 5                              1994-03-01/08:29:10.0
THIS IS EVENT NUMBER 6                              1994-03-01/08:29:15.0
THIS IS EVENT NUMBER 7                              1994-03-01/08:29:20.0
THIS IS EVENT NUMBER 8                              1994-03-01/08:29:25.0
THIS IS EVENT NUMBER 9                              1994-03-01/08:29:30.0
THIS IS EVENT NUMBER 10                             1994-03-01/08:29:35.0
THIS IS EVENT NUMBER 11                             1994-03-01/08:29:40.0
THIS IS EVENT NUMBER 22                             1994-03-01/08:29:45.0
THIS IS EVENT NUMBER 13                             1994-03-01/08:29:50.0
THIS IS EVENT NUMBER 14                             1994-03-01/08:29:55.0
THIS IS EVENT NUMBER 15                             1994-03-01/08:30:00.0
THIS IS EVENT NUMBER 16                             1994-03-01/08:30:05.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                F2:                  F3:                  F4:
PRINT               BOTTOM               DELETE               RETURN
```

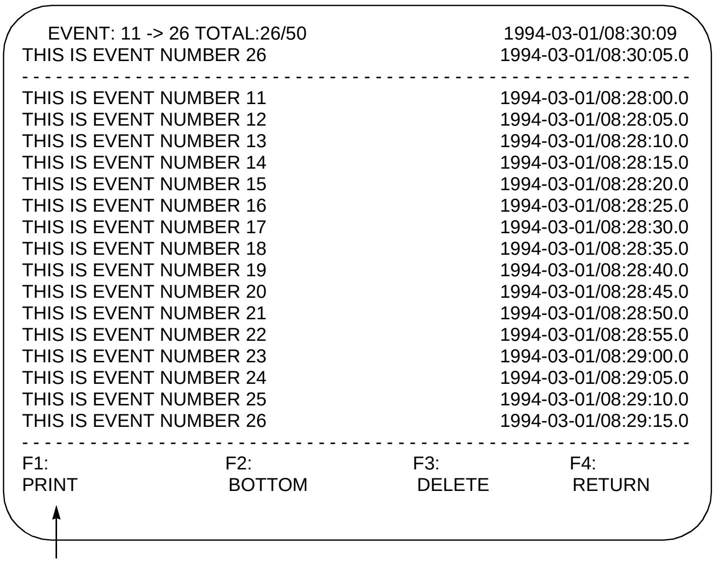
Figure 8-13. List scrolled back to the oldest event

Alternatively, to immediately redisplay the latest 16 events, press function key F2 (marked “BOTTOM”).



```
   EVENT: 1 -> 16 TOTAL:26/50                          1994-03-01/08:30:09
THIS IS EVENT NUMBER 16                               1994-03-01/08:30:05.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
THIS IS EVENT NUMBER 1                                1994-03-01/08:28:00.0
THIS IS EVENT NUMBER 2                                1994-03-01/08:28:05.0
THIS IS EVENT NUMBER 3                                1994-03-01/08:28:10.0
THIS IS EVENT NUMBER 4                                1994-03-01/08:28:15.0
THIS IS EVENT NUMBER 5                                1994-03-01/08:28:20.0
THIS IS EVENT NUMBER 6                                1994-03-01/08:28:25.0
THIS IS EVENT NUMBER 7                                1994-03-01/08:28:30.0
THIS IS EVENT NUMBER 8                                1994-03-01/08:28:35.0
THIS IS EVENT NUMBER 9                                1994-03-01/08:28:40.0
THIS IS EVENT NUMBER 10                               1994-03-01/08:28:45.0
THIS IS EVENT NUMBER 11                               1994-03-01/08:28:50.0
THIS IS EVENT NUMBER 12                               1994-03-01/08:28:55.0
THIS IS EVENT NUMBER 13                               1994-03-01/08:29:00.0
THIS IS EVENT NUMBER 14                               1994-03-01/08:29:05.0
THIS IS EVENT NUMBER 15                               1994-03-01/08:29:10.0
THIS IS EVENT NUMBER 16                               1994-03-01/08:29:15.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                     F2:                  F3:             F4:
PRINT                    BOTTOM               DELETE          RETURN
```

To print all or a part of the event list, press function key F1. The following question is output in the dialog area:



```
   EVENT: 11 -> 26 TOTAL:26/50                          1994-03-01/08:30:09
THIS IS EVENT NUMBER 26                                 1994-03-01/08:30:05.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
THIS IS EVENT NUMBER 11                                 1994-03-01/08:28:00.0
THIS IS EVENT NUMBER 12                                 1994-03-01/08:28:05.0
THIS IS EVENT NUMBER 13                                 1994-03-01/08:28:10.0
THIS IS EVENT NUMBER 14                                 1994-03-01/08:28:15.0
THIS IS EVENT NUMBER 15                                 1994-03-01/08:28:20.0
THIS IS EVENT NUMBER 16                                 1994-03-01/08:28:25.0
THIS IS EVENT NUMBER 17                                 1994-03-01/08:28:30.0
THIS IS EVENT NUMBER 18                                 1994-03-01/08:28:35.0
THIS IS EVENT NUMBER 19                                 1994-03-01/08:28:40.0
THIS IS EVENT NUMBER 20                                 1994-03-01/08:28:45.0
THIS IS EVENT NUMBER 21                                 1994-03-01/08:28:50.0
THIS IS EVENT NUMBER 22                                 1994-03-01/08:28:55.0
THIS IS EVENT NUMBER 23                                 1994-03-01/08:29:00.0
THIS IS EVENT NUMBER 24                                 1994-03-01/08:29:05.0
THIS IS EVENT NUMBER 25                                 1994-03-01/08:29:10.0
THIS IS EVENT NUMBER 26                                 1994-03-01/08:29:15.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                     F2:                   F3:                 F4:
PRINT                    BOTTOM                DELETE              RETURN
```

RANGE OF EVENTS? FROM:

The answer should be the number of the event which is to be printed first. To print the section of the event list which is currently displayed on the screen, just type <CR>.

If an answer is supplied to the question above, a second question is asked:

TO:

The answer should be the number of the event which is to be printed last. If just <CR> is input, then all the events in the remainder of the list are printed.

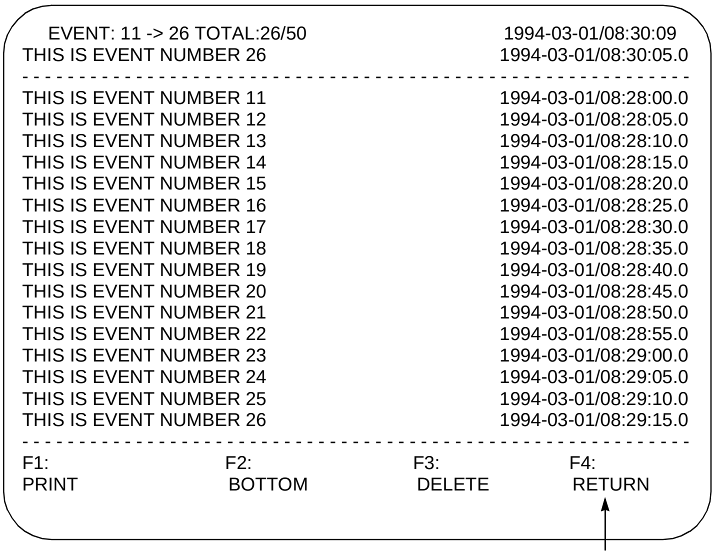
At the top of the event list, a leader is printed. This header is made up of 2x18 character strings which are defined in data base element TERMPAR, plus the current date and time.

To delete all the current events from the event list, press function key F3. A question is asked in the dialog area:

DO YOU REALLY WANT TO DELETE EVENT LIST?

If the answer is YES, the current events are deleted and the event list is then empty.

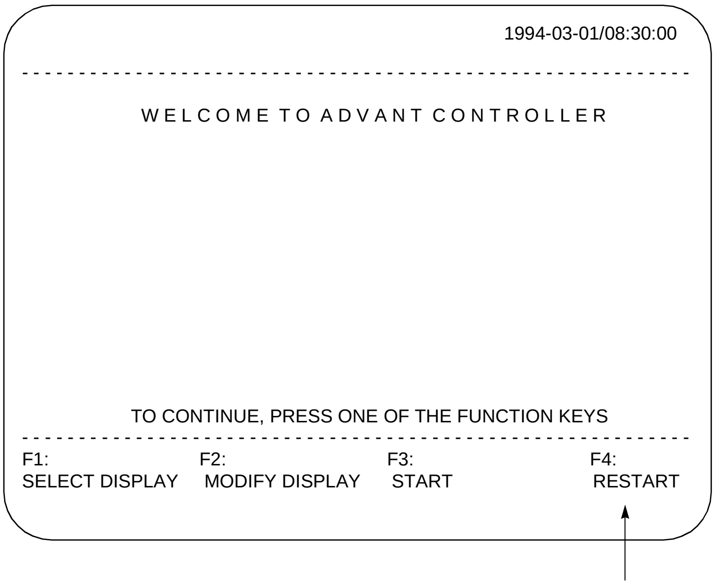
When the event list no longer required on the screen, press function key F4. If a display was on the screen before the event list was displayed, then that display is output again as in Figure 8-4. Otherwise the screen is displayed as in Figure 8-1.



```
   EVENT: 11 -> 26 TOTAL:26/50                          1994-03-01/08:30:09
THIS IS EVENT NUMBER 26                                 1994-03-01/08:30:05.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
THIS IS EVENT NUMBER 11                                 1994-03-01/08:28:00.0
THIS IS EVENT NUMBER 12                                 1994-03-01/08:28:05.0
THIS IS EVENT NUMBER 13                                 1994-03-01/08:28:10.0
THIS IS EVENT NUMBER 14                                 1994-03-01/08:28:15.0
THIS IS EVENT NUMBER 15                                 1994-03-01/08:28:20.0
THIS IS EVENT NUMBER 16                                 1994-03-01/08:28:25.0
THIS IS EVENT NUMBER 17                                 1994-03-01/08:28:30.0
THIS IS EVENT NUMBER 18                                 1994-03-01/08:28:35.0
THIS IS EVENT NUMBER 19                                 1994-03-01/08:28:40.0
THIS IS EVENT NUMBER 20                                 1994-03-01/08:28:45.0
THIS IS EVENT NUMBER 21                                 1994-03-01/08:28:50.0
THIS IS EVENT NUMBER 22                                 1994-03-01/08:28:55.0
THIS IS EVENT NUMBER 23                                 1994-03-01/08:29:00.0
THIS IS EVENT NUMBER 24                                 1994-03-01/08:29:05.0
THIS IS EVENT NUMBER 25                                 1994-03-01/08:29:10.0
THIS IS EVENT NUMBER 26                                 1994-03-01/08:29:15.0
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                     F2:                 F3:               F4:
PRINT                   BOTTOM              DELETE            RETURN
```

8.7 Restarting the MasterView 320

To return to the display “WELCOME TO ADVANT CONTROLLER”, press function key F4.



```
                                                        1994-03-01/08:30:00

- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

              W E L C O M E  T O  A D V A N T  C O N T R O L L E R









             TO CONTINUE, PRESS ONE OF THE FUNCTION KEYS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                 F2:                   F3:                    F4:
SELECT DISPLAY      MODIFY DISPLAY        START                  RESTART
```

8.8 Restart after Communication Interruption

The communication between the Controller and the terminal may be interrupted, e.g. if:

- the terminal is connected via a telephone modem.
- the terminal has temporarily been disconnected or switched off.

When the terminal is reconnected the display has either disappeared or is out of date.

If this happens, press “CTRL-Y”. The terminal will restart and show the first display within 30s. You may then continue working.

Chapter 9 Relevant Data Base Elements

This chapter contains brief descriptions of relevant data base elements. Further information can be found in the manual “Advant Controller 400 Series Data Base Elements”.

The TERM, TERMGEN and TERMPAR elements always exist in any system which contains the MasterView 320 function.

Before the MasterView 320 can be used, the data base must be dimensioned for the required number of displays and the required number of variables. When this is done (using DIMDB on the Advant Station 100 Series Engineering Station), the TERMDIS, TERMDYN, TERMREF and TERMSTR elements are all dimensioned automatically.

NOTE

The data base element can be observed with help of the Advant Station 100 Series Engineering Station command “Modify Data Base”. However, only the CI531, TERM and TERMPAR elements should be modified using the Advant Station 100 Series Engineering Station. The data base elements TERMGEN, TERMDIS, TERMDYN, TERMREF, TERMSTR should not be created or modified using CRDB/MDB on the Advant Station 100 Series Engineering Station. These data base elements are for the use of the MasterView 320 only. Some terminals of the TERMGEN,TERMPAR, TERMSTR and TERMDYN elements can be modified by PC program (see Chapter 10 Connection to PC).

9.1 TERM

There is one TERM data base element for each MasterView 320 terminal in the system. The names of the elements are TERM_1 to TERM_4. Each TERMINAL element relates to one channel on a CI531 HW submodule. With this element it is possible to change the baud rate, character size etc. of the channel. If these characteristics are changed, then they must also be changed on the MasterView 320 terminal itself.

To ensure that the MasterView 320 is started automatically at system initialization, the ACT terminal on the TERM element must be set to 1 when configuring the system.

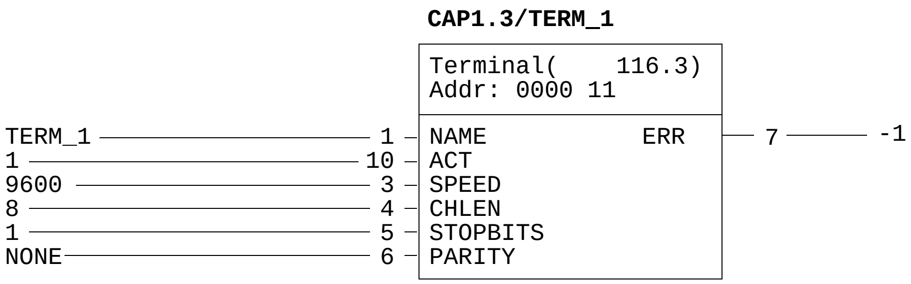


Figure 9-1. TERM element

The MasterView 320 terminal, which is connected to a TERM Data Base Element, is activated automatically when DICONFIG is issued (by transition from configuration mode to operation mode) providing the connection ACT is set at “1”.

The communication may also be activated/restarted from the Advant Station 100 Series Engineering Station provided that the MasterPiece system is in operation mode. In this latter case, the TERM element is selected by issuing the command “Modify Data Base”. When the operator leaves the element, MasterAid asks the question:

DO YOU WANT TO ACTIVATE THE TERMINAL WITH THESE PARAMETERS? (Y/N)

If you answer YES to the question, the MasterView 320 terminal restarts.

If the terminal has been activated previously, a system message confirms that the communication has been restarted.

9.2 TERMPAR

There is one TERMPAR element for each MasterView 320 terminal in the system. Each element contains parameter information for one MasterView 320 terminal.

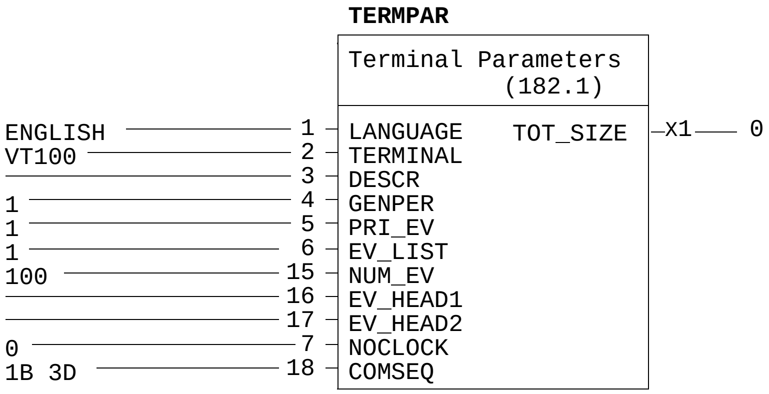


Figure 9-2. TERMPAR element

9.3 TERMGEN

There is one TERMGEN element for each MasterView 320 terminal in the system. Each element contains information about the display currently being shown on a MasterView 320 terminal.

The first TERMGEN element also contains the 20 string representations for boolean variables. These strings are used by all MasterView 320 terminals. Subsequent TERMGEN elements do not contain those strings.

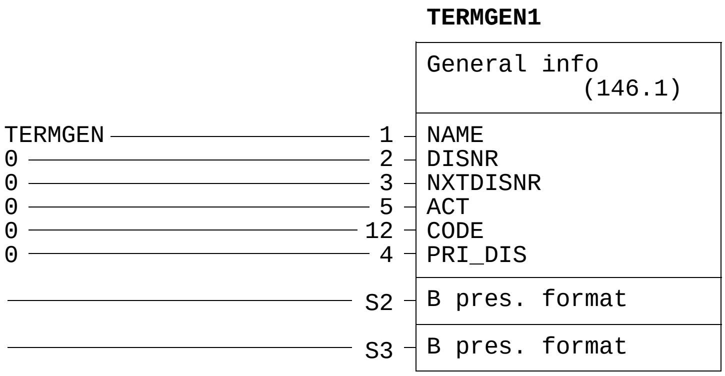


Figure 9-3. TERMGEN element

9.4 TERMDIS

There is one TERMDIS element for each display. Each element is created by the MasterView 320 when a display is created on the screen. It contains information about the display and about which dynamic variables belong to the display.

9.5 TERMDYN

There is one TERMDYN element for each dynamic variable. Each element is created by the MasterView 320 when a dynamic variable is defined for a display. It contains information on how to display the variable and about which DAT element contains the value of the variable.

9.6 TERMREF

There is one TERMREF element for each display. Each element is created by the MasterView 320 when a display is created. It contains information on which static texts belong to a display.

9.7 TERMSTR

There is one TERMSTR element for each static text. Each element is created by the MasterView 320 when a static text is defined for a display. It contains the text and information on where to display it.

9.8 CI531

CI531 represents the hardware CI531. See Chapter 4 Installation.

9.9 Source Code Handling

Source code handling is used for two purposes:

1. A display is to be transferred to another MasterPiece system.
2. MasterView 320 is malfunctioning and the cause is suspected to be that a data base element has been destructed. This can be the case during application work when the system has been manipulated in an abnormal way or when a defective code has been executed.

NOTE

The easiest way to do a source code dump of MasterView 320 is to dump all MasterView 320's data base elements, i.e. all CI531, TERM, TERMPAR, TERMGEN, TERMDIS, TERMDYN, TERMREF and TERMSTR.

9.9.1 Dumping the Complete MV 320 Application

The following source code dumps contain the complete MasterView 320. Most times only the terminal parameters and the displays are of interest.

HW installation

```
DUDBS SRCE:CI532; SEL=CI532
```

Communication parameters

```
DUDBS SRCE:TERM;SEL=CAPTERM
```

Terminal parameters

```
DUDBS SRCE:TPAR;SEL=TERMPAR
```

Displays

```
DUDBS SRCE:TGENA;SEL=TERMGENB   (the strings representing boolean variables)

DUDBS SRCE:TGENB;SEL=TERMGENB

DUDBS SRCE:TDIS;SEL=TERMDIS

DUDBS SRCE:TDYNI;SEL=TERMDYN (I)

DUDBS SRCE:TDYNIL;SEL=TERMDYN (IL)

DUDBS SRCE:TDYNR;SEL=TERMDYN (R)

DUDBS SRCE:TREF;SEL=TERMREF

DUDBS SRCE:TSTR;SEL=TERMSTR
```

9.9.2 Dumping a Single MasterView 320 Display

Proceed as follows for dumping a single display (the example is dumping display 7).

1. Observe the TERMDIS7 element with the Advant Station 100 Series Engineering Station command MDB. See which TERMDYN elements are referenced by TERMDIS7. Example: TERMDIS7 references TERMDYN12-14 and TERMDYN17-23.
2. Observe the TERMREF7 element with the Advant Station 100 Series Engineering Station command MDB. See which TERMSTR elements are referenced by TERMREF7. Example: TERMREF7 references TERMSTR27>32.
3. Dump the following records:

   ```
   DUDBS SRCE:TDIS;SEL=TERMDIS7
   DUDBS SRCE:TDYN1;SEL=TERMDYN12>14
   DUDBS SRCE:TDYN2;SEL=TERMDYN17>23
   DUDBS SRCE:TREF;SEL=TERMREF7
   DUDBS SRCE:TSTR;SEL=TERMSTR27>32
   ```

4. Also dump the first TERMGEN element.

   ```
   DUDBS SRCE:TGEN;SEL=TERMGEN1
   ```

   TERMGEN1 contains the strings which represent boolean variables.

NOTE

All displays use the strings in TERMGEN1. Therefor, be careful before loading TERMGEN1 source code into a running system. Compare the TERMGEN1 source code with TERMGEN1 in the running system. Check that source code will not erase any strings.

Chapter 10 Connection to PC

A PC program can interface with a MasterView 320 by making connections to certain terminals of the TERMGEN, TERMPAR, TERMDYN and TERMSTR elements. See the Data Base Elements manual for more information on those elements.

10.1 Changing Displays

A PC program can dictate which displays are output on an MasterView 320 screen by sending the display number to terminal number 3 (NXTDISNR) of the TERMGEN element (see Figure 8-9). When a display is on the screen, the values of terminal 2 (DISNR) and terminal 3 (NXTDISNR) are the same. If the value of NXTDISNR is different from DISNR, the MasterView 320 tries to output the display specified by the value in NXTDISNR. If the display does not exist or cannot be output, the old display is left on the screen. When there is no display on the screen, the values of DISNR and NXTDISNR are set to 0. The values of DISNR and NXTDISNR are only monitored by the MasterView 320 after the “START" key has been pressed, that is when the display in Figure 5-7 is on the screen.

On start-up, if GENPER in data base element TERMPAR is 1, the screen “WELCOME TO ADVANT CONTROLLER” is displayed and this cannot be changed by PC program. To make the MasterView 320 go automatically to the display in Figure 5-7 on start up, terminal GENPER in database element TERMPAR should be set to 0.

10.2 Input from the Keyboard

A PC program can receive input from the MasterView 320 keyboard by setting terminal number 5 (ACT) in the TERMGEN element to 1 (see Figure 10-1). The next character received from the keyboard is then stored as a decimal value in terminal number 12 (CODE), where it can be read by the PC program.

Example: If the character “A” is received from the keyboard, the value 65 is stored in terminal 12

If the key pressed is on the numeric keypad (most right on the keypad), the value is stored in CODE.

Example: If keypad “9” is pressed, the value 9 is stored in CODE.

The ordinary numeric keys (the horizontal row above the letter keys) give ASCII codes.

Example: If the ordinary numeric key “9” is pressed, the value 57 is stored in CODE.

When a character is received, ACT is automatically reset to 0.In this way, a PC program can have its own function keys defined on the MasterView 320 keyboard.

The standard function keys used for controlling the MasterView 320 are not adjusted to the PC program. These keys are: F1(PF1), F2(PF2), F3(PF3), F4(PF4), ← → ↓ ↑.

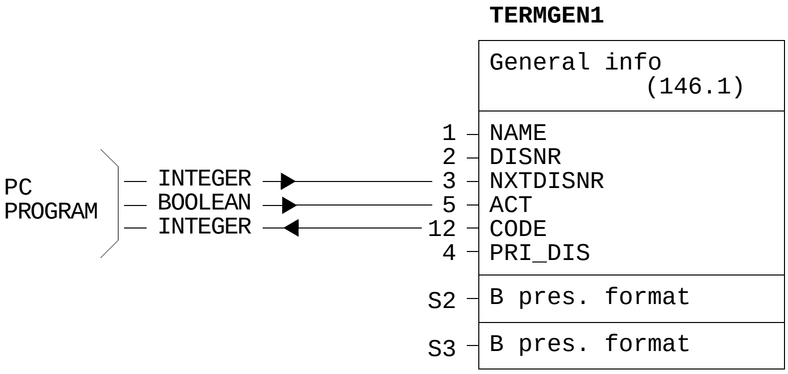


Figure 10-1. Connecting the MasterVew 320 to a PC program

10.3 Printing Displays

A display which is currently being shown on the MasterView 320 screen can be printed on the printer attached to this node, using a PC program. This is done by setting terminal number 4 (PRI_DIS) in the TERMGEN element to 1 (see Figure 10-1). When the display has been queued to the printer, PRI_DIS is automatically reset to 0. If there is no display on the screen, nothing is printed and PRI_DIS remains set to 1.

The printer must have been previously activated using the Modify Data Base command MDB on the Advant Controller 100 Series.

10.4 Changing Presentation Type

You can change the presentation type of dynamic variables and static texts by modifying terminals in the relevant TERMDYN and TERMSTR elements.

To modify the presentation type of a particular dynamic variable, you have to find the relevant TERMDYN element. Firstly you have to examine the relevant TERMDIS element, using MDB.

The number of the TERMDIS element is the same as the number of the display. References to all the TERMDYN elements for a display are held in terminals 15.1 to 15.48 of TERMDIS. The TERMDYN references are stored in the order they are created.

Exceptions to this rule occur when a TERMDYN element is deleted and then recreated. When a TERMDYN element is deleted, its reference is set to 0. If a TERMDYN element is then created, its reference is inserted in the first 0 position.

When the correct TERMDYN element is found, this can be confirmed by examining terminal 4 (XPOS) and 5 (YPOS) and comparing their values with the X,Y coordinates of the variable on the screen.

The presentation type of the dynamic variable is indicated by the value of terminal 14 (PRESTY) in the TERMDYN element. The possible values for this terminal are given in Table 10-1.

To modify the presentation type of a particular static text, you have to find the relevant TERMSTR element. Firstly you have to examine the relevant TERMREF element, using MDB.

The number of the TERMREF element is the same as the number of the display. References to all the TERMSTR elements for a display are held in terminals 1.1 to 1.50 of TERMREF. The TERMSTR references are stored in the order they are created.

Exceptions to this rule occur when a TERMSTR element is deleted and then recreated. When a TERMSTR element is deleted, its reference is set to 0. If a TERMSTR element is then created, its reference is inserted in the first 0 position.

When the correct TERMSTR element is found, this can be confirmed by examining terminal 2 (XPOS) and 3(YPOS) and comparing their values with the X,Y co-ordinates of the text on the screen. The presentation type of the text is indicated by the value of terminal 4 (QUAL) in the TERMSTR element. The possible values for this terminal are given in Table 10-1.

Table 10-1. Values for presentation type

Value	Presentation type
0	ordinary presentation
1	inverse video
2	underscore
4	blinking
8	intensity

If more than one presentation type is required for one dynamic variable or static text, it is achieved by adding the individual values together.

Example: To present a variable or text in inverse video and different intensity, the presentation type must have a value of 9.

10.5 Changing “Generate Permission”

Terminal GENPER in database element TERMPAR can be changed by PC program but the new value is not effective until the MasterView 320 terminal is restarted. This is achieved by pressing the RESTART function key on the MasterView 320 terminal.

10.6 Connecting DAT Elements

A DAT element can be updated by a PC program or from the MasterView 320. There is no risk that they overwrite each other because the PC program has higher priority. MasterView 320 accesses the Data Base only between PC program cycles, see Figure 10-2.

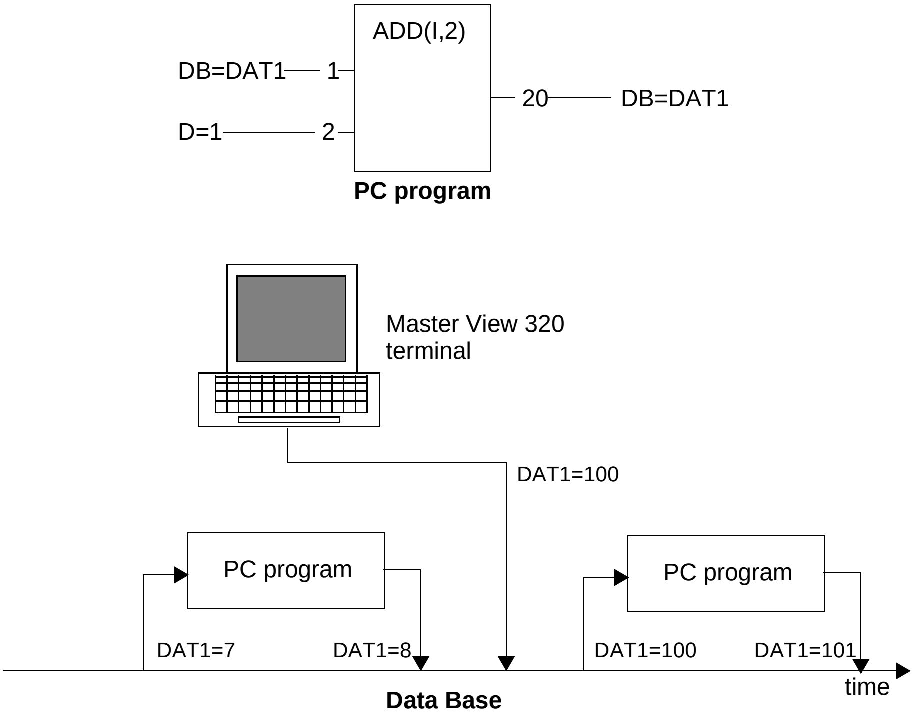


Figure 10-2. Real time view of Master View 320 and PC program

10.7 Using the Character Data Type

As described in Section 5.3.2 Integer Variables, integer-long variables can be displayed as strings of 1 to 4 characters. To help you, there are two PC elements: CONV-AI and CONV-IA (see Figure 8-11). CONV-AI takes as input 1 to 4 characters and converts them into an integer long value which can be stored in a DAT element. CONV-IA performs the reverse. It takes as input an integer long value and converts it to 1 to 4 ASCII characters. See the PC Elements manual for more information.

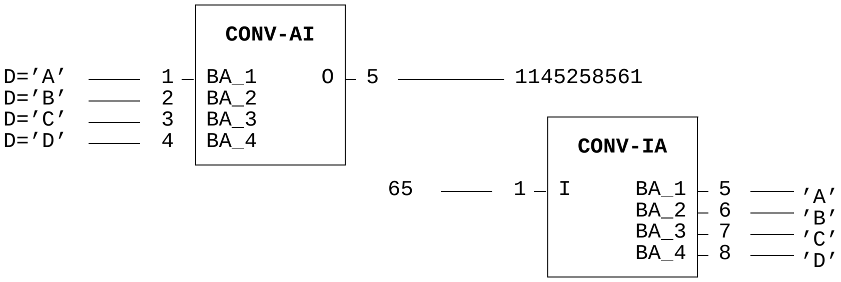


Figure 10-3. PC element CONV-AI and CONV-IA

10.8 Printer Instead of Terminal

MasterView 320 can be used without terminal. The display will be chosen by a PC program, which orders printout of the display at the right moment (see Section 10.9 Examples of PC Programs). Events are printed out when the data base connection TERMPAR:PRI_EV is 1.

NOTE

MasterView 320 uses the ordinary printer of the Controller. The printer is represented by the DB element PRI _01. Do not connect the printer to the connector usually used for the terminal. The DB element representing the terminal, for instance TERM_1, must be activated (ACT=1). In the terminal connector, i.e. on the hardware PM150 or CI531, the following pins must be coupled to each other.

- 7 - 8 (RTS - CTS)
- 4 - 1 - 6 (DTR - DCD - DSR)

This is the same coupling as in the ordinary terminal cable, see Section 4.4.1 Connection Without a Modem.

10.9 Examples of PC Programs

Following are some examples of PC programs which are the features described earlier in this chapter. They are not intended to be complete working programs, but suggestions on how the various features may be used.

10.9.1 Changing Displays

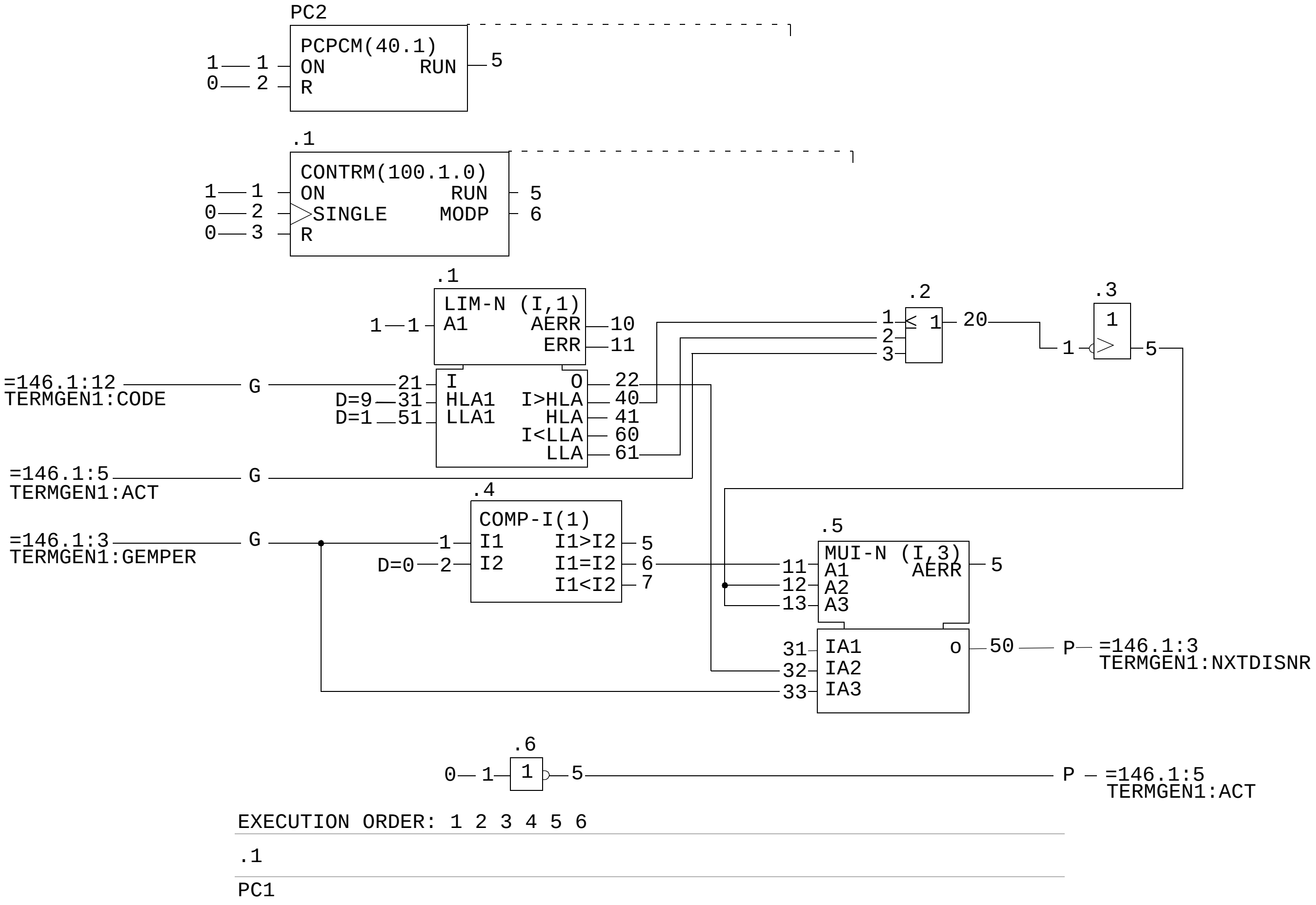
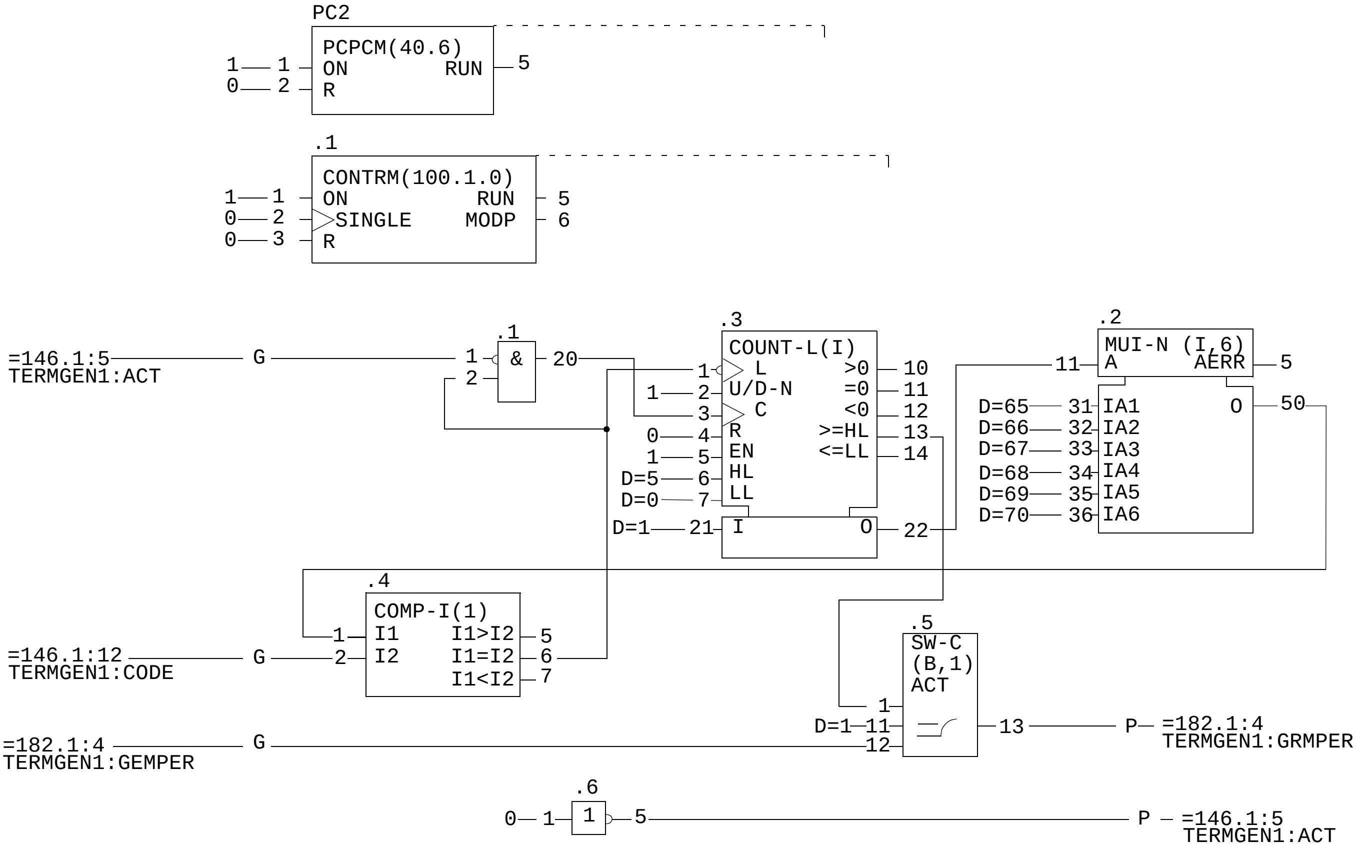


Figure 10-4. Display change

The function of this PC program is to change the display on the screen using the numeric keypad on the keyboard. Pressing a key 1 to 9 will cause display 1 to 9 to be output on the screen. Input from the keyboard is taken via TERMGEN1:CODE to the limiter element in PC1.1.1. This limits the input to a number between 1 and 9. The number is then output via the multiplexer element to TERMGEN1:NXTDISNR.

Using the comparator element in PC1.1.4, a display can be selected automatically when the “start” function key is pressed. In this example, the display selected is number 1. This can be useful if, for example, display number 1 is a menu display. Element PC1.1.6 is used to reset TERMGEN1:ACT back to 1 when the input from the keyboard has been processed. This allows further input of keyboard characters.

10.9.2 Changing “Generate Permission”



```
EXECUTION ORDER: 1 2 3 4 5 6
.1
PC2
```

Figure 10-5. Changing “generate permission”

This PC program provides a password function which sets TERMPAR1:GENPER to 1 if a correct six-character password is input. It should be noted that the new value of GENPER does not come into effect until the MasterView 320 is restarted.

The password is defined in element PC2.1.3, in this case, “ABCDEF”. The characters are input from the keyboard via TERMGEN1:CODE, counted by PC2.1.2 and compared by PC2.1.4. If a correct password is input, TERMPAR1:GENPER is set to 1 by PC2.1.5.

Element PC2.1.6 is used to reset TERMGEN1:ACT to 1 when each character from the keyboard has been processed. This allows input of the next keyboard character.

10.9.3 Changing Presentation Type

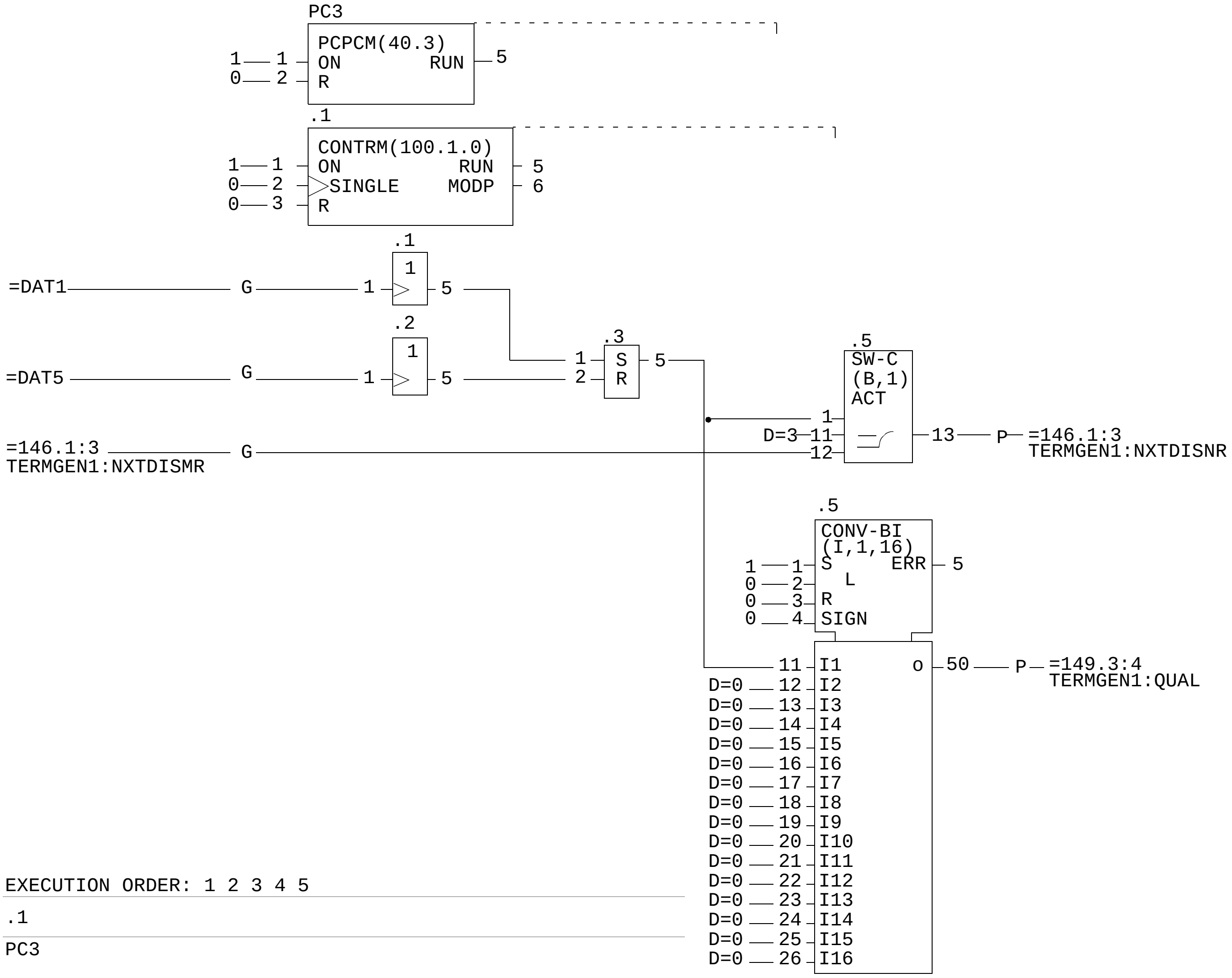


Figure 10-6. Changing presentation type

This PC program modifies the presentation type of static texts or dynamic variables. The program monitors a broken variable, DAT1. If the variable becomes set to 1, the program forces the MasterView 320 to output a different display (in this example, display number 3) by modifying TERMGEN1:NXTDISNR. Within this display there could be a static text (as in the example) or a dynamic variable which is to be displayed in inverse video. The correct presentation type for the text or variable is calculated by converting bit data to an integer using PC3.1.5. The integer is then passed to TERMSTR3:QUAL or TERMDYN:PRESTY.

In the example, a further display cannot be selected until DAT5 has been set to 1. This could, for example, be an indication of operator acknowledgment. When the display is deselected, the presentation type should be restored to its previous value.

10.9.4 Changing Min and Max Values

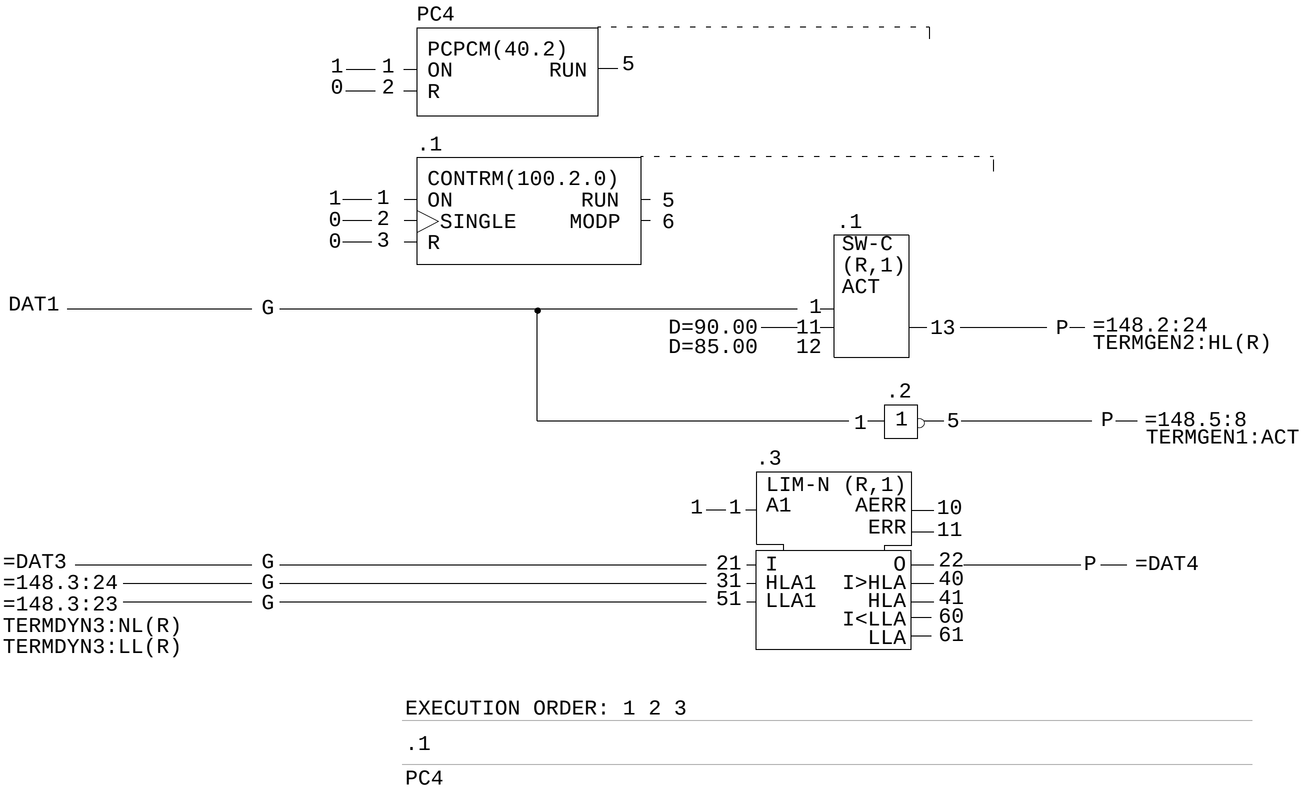


Figure 10-7. Changing min and max values

This PC program performs two separate functions. In PC4.1.1, a boolean variable DAT1 is monitored. If it becomes set to 1, the maximum value of a dynamic variable is modified in TERMDYN2:HL(R). Element PC4.1.2 uses the same boolean variable to modify TERMDYN5:CHANGE in a different TERMDYN element. This value determines whether or not a dynamic variable can be modified by the MasterView 320 operator.

In PC4.1.3, the value of a variable DAT3 is limited to the minimum and maximum values which are specified in TERMDYN3:LL(R) and TERMDYN3:HL(R).

10.9.5 Printing a Single Display

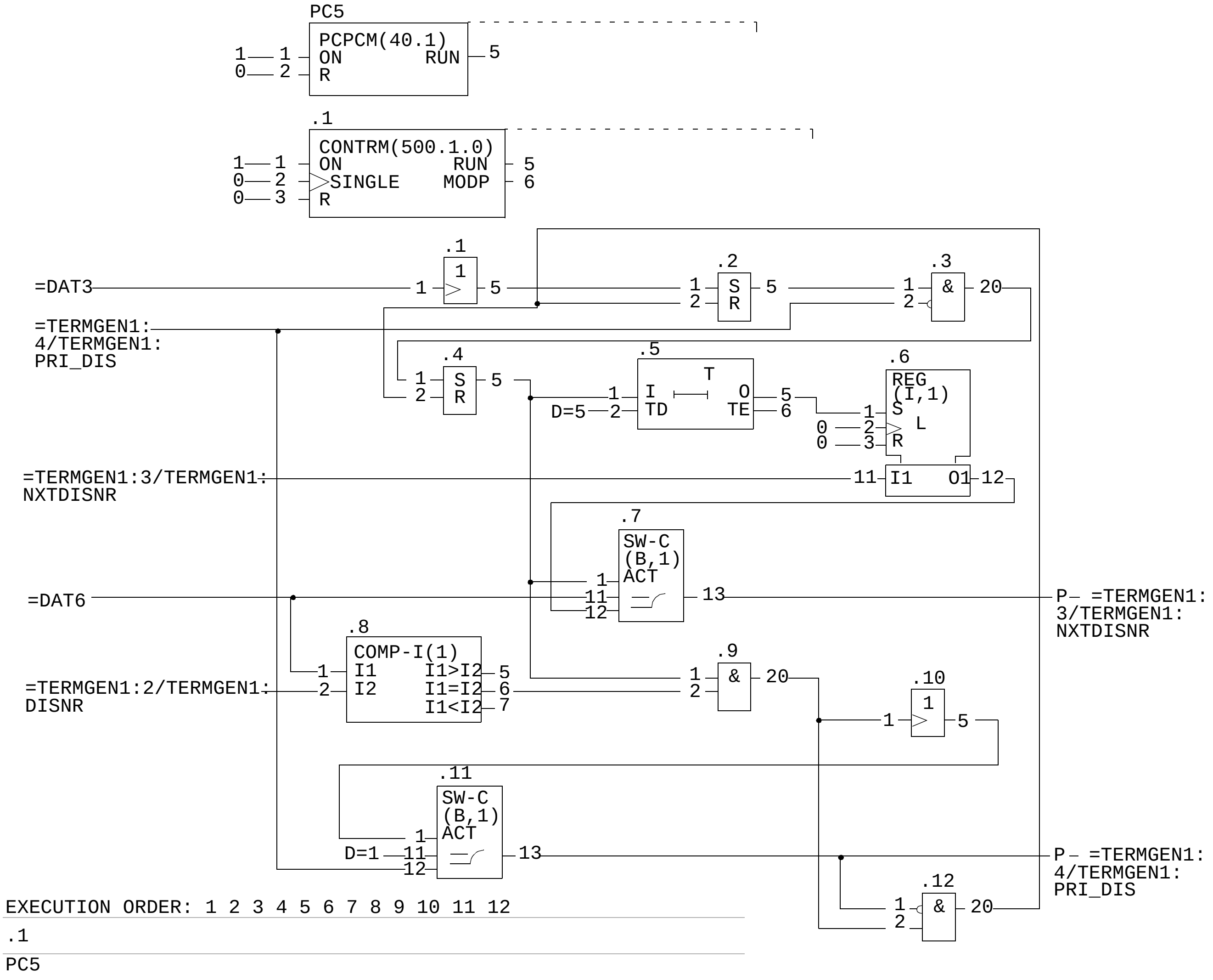


Figure 10-8. Display printout

This PC program selects a single display and prints it on the printer. DAT6 holds the number of the required display. The program monitors the boolean DAT3. When DAT3 goes from 0 to 1, the MasterView 320 screen changes displays to the one required by DAT6. PC5.1.7. triggers the display change by setting TERMGEN1:NXTDISNR to the value of DAT6. The required display is printed out on the printer. PC5.1.8 triggers the printout by causing TERMGENI:PRI_DIS to be set to 1. After printing out the display, MasterView 320 resets TERMGENI:PRI_DIS to 0. The PC program changes back to the original display. PC5.1.6. has stored the number of the original display.

10.9.6 Printing Several Displays

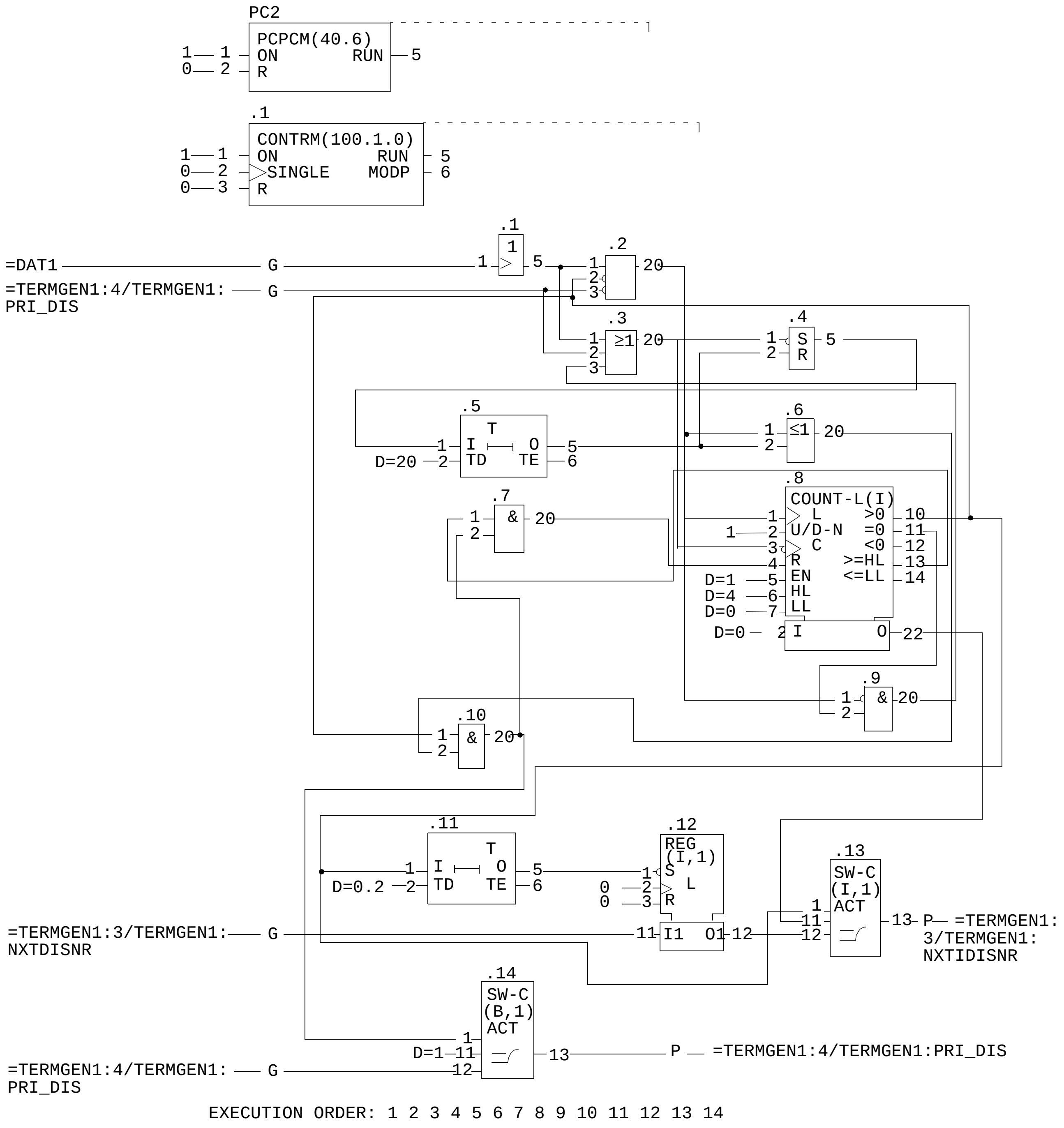


Figure 10-9. Printout of several displays

This PC program selects a number of displays in turn (in this example, 1 to 4). When each display has been output to the screen, it will be printed.

PC6.1.2 dictates when the printing is to start. The printing cannot start if there is already printing in progress or if another program is using the print function. The program monitors a boolean variable DAT1. When the variable becomes set to 1, the sequence can start if the other conditions are satisfied. The displays to be printed are counted by PC6.1.8. Each display is selected for output by passing the display number from PC6.1.8 through PC6.1.13 to TERMGEN1:NXTDISNR.

In order to make sure that each display stays on the screen long enough to be printed, there is a delay (PC6.1.5) before the next display is selected. When all displays have been selected and printed, the original display number is taken from PC6.1.12 and passed through PC6.1.12 to TERMGEN1:NXTDISNR. This causes the original display to be output to the screen.

Chapter 11 Troubleshooting

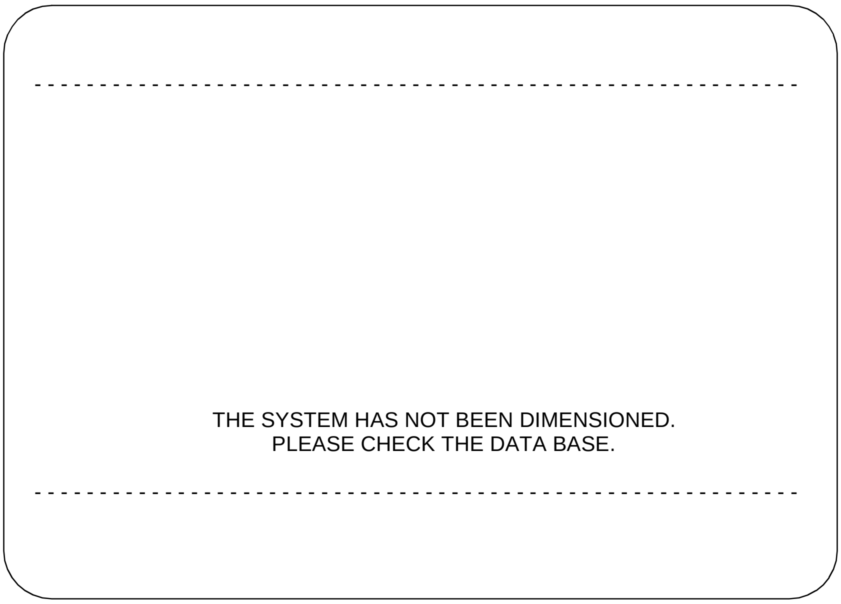
11.1 Error Messages

11.1.1 Operator's Dialog

Any errors which occur as a result of operator input are indicated in a message which is displayed on the bottom line of the dialog area. The error message disappears when valid operator input is received.

11.1.2 Incorrect Database

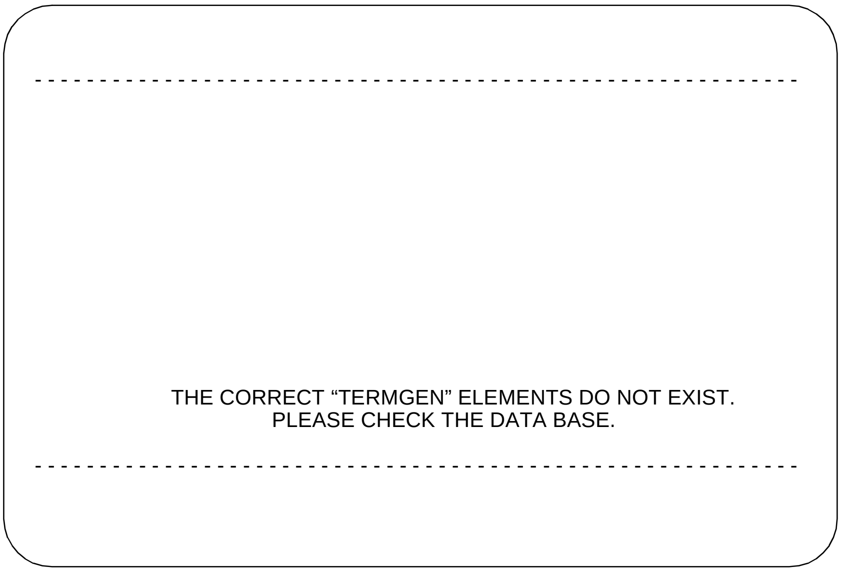
If the system is started before the data base has been correctly dimensioned, the following screen is displayed on the MasterView 320:



THE SYSTEM HAS NOT BEEN DIMENSIONED.
PLEASE CHECK THE DATA BASE.

Figure 11-1. Screen display before the data base has been dimensioned

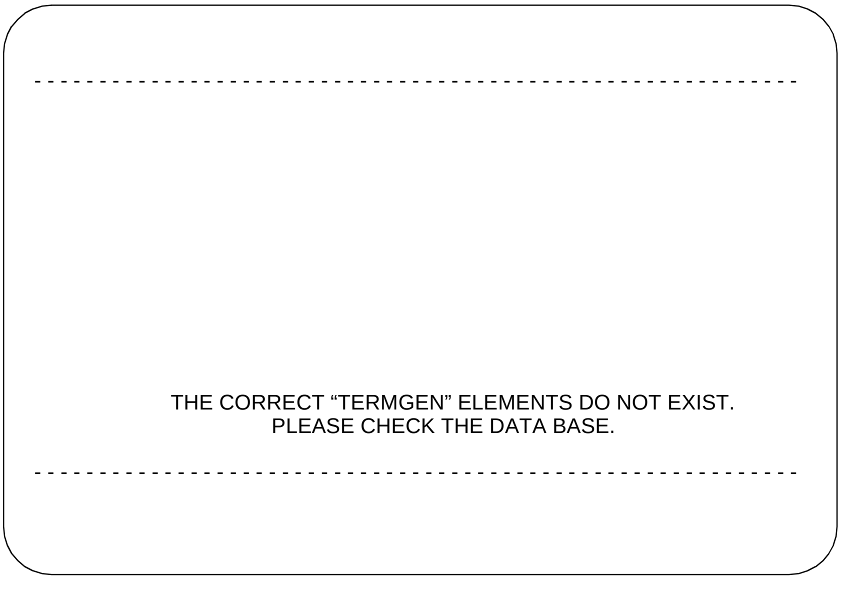
For each MasterView 320 terminal, there is a data base element TERMGEN. If for some reason these elements do not exist, the following screen is displayed:



THE CORRECT “TERMGEN” ELEMENTS DO NOT EXIST.
PLEASE CHECK THE DATA BASE.

Figure 11-2. Screen display when the TERMGEN elements do not exist

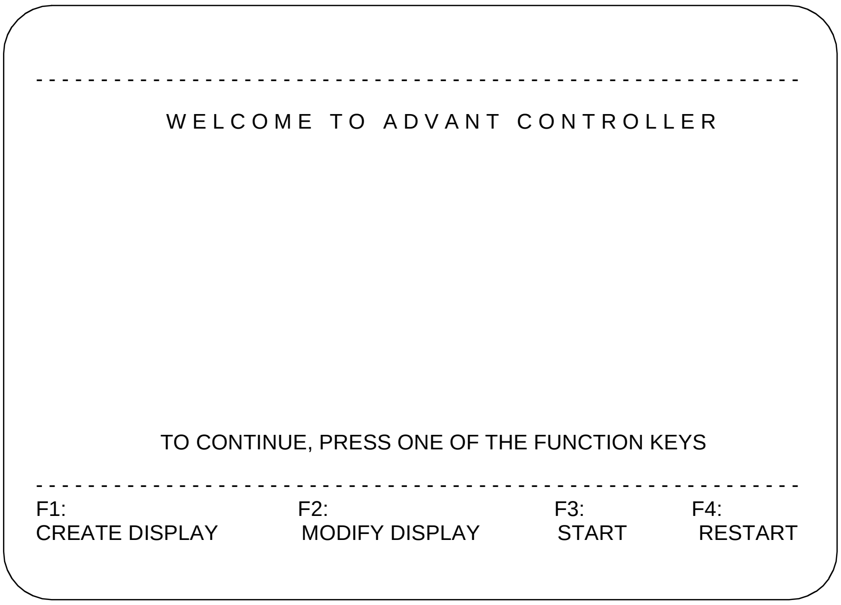
For each MasterView 320 terminal, there is a data base element TERMPAR which provides initial parameters for the terminal. If, for some reason, these elements do not exist, the following screen is displayed:



THE CORRECT “TERMGEN” ELEMENTS DO NOT EXIST.
PLEASE CHECK THE DATA BASE.

Figure 11-3. Screen display when the TERMPAR elements do not exist

If the data base has been dimensioned correctly, the following screen is displayed:



```
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
                    WELCOME TO ADVANT CONTROLLER




                    TO CONTINUE, PRESS ONE OF THE FUNCTION KEYS
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
F1:                       F2:                      F3:          F4:
CREATE DISPLAY            MODIFY DISPLAY           START        RESTART
```

Figure 11-4. Screen display when MasterView 320 os ready for use

11.1.3 The MasterView 320 is Shut Down and Restarted

If a serious internal error occurs within the MasterView 320, it is shut down and restarted. When it is restarted, the screen in Figure 11-4 is displayed and a message is output on line 2:

> MV 320 HAS BEEN STOPPED AND RESTARTED DUE TO ERROR NUMBER nnn.
> PLEASE CONTINUE.

where "nnn" is the internal system error number. The number is reported from a low level system program and can not be interpreted by the user.

Operation of the MasterView 320 can continue but if the error occurs repeatedly, report the problem to ABB, quoting the error number and the circumstances under which the error occurs.

NOTE

Even when the operator has ordered restart, either from the function key F4 or from Advant Station 100 Series Engineering Station, this message will appear (without indicating an error).

11.2 If The MasterView 320 does Not Start Up

If the MasterView 320 does not start up, it might be one of the following reasons.

- The system software does not contain the option MasterView 320, i.e. QC01-LOS11 for Advant Controller 410 or QC02-LOS21 for Advant Controller 450. To check up which options are included in the system software of the Controller, give the command "SHTARG" (Show Target System) from the Advant Station 120.
- You use an incorrect cable for the terminal. Observe the DB element TERM. Observing the DB element TERM, enter the command "GVD", “Get Values Dynamically”. The outputs listed below should have the following values:

Output	**Value**		
	without a modem	**with a modem**	**AC 410 terminal 1**
VALID	1	1	0
DSR	1	1	0
CTS	1	1	0
DCD	1	1	0
RI	0	0	0

- The data base is filled in incompletely, check the following (the example is based on terminal 3):
  - DB element TERM_3; that the input ACT=1.
  - DB element CI531;
    - that the inputs “POSITION” and “SUBPOS” indicate the position where the hardware CI531 is placed.
    - If terminal 3 is connected to channel 1 on CI531; that the input CH1=TERM_3.
    - If terminal 3 is connected to channel 2 on CI531; that the input CH2=TERM_3.
    (Terminal 1 in Advant Controller 410 does not use the hardware CI531; neither does the DB element CI531)

11.3 If The Function Keys do Not Work

The function keys are the keys PF1-PF4 in the upper right corner of the keyboard. Other keys, marked F1-F4, do not work as function keys.

11.4 If it is Impossible to Add Text

Display Generation Permission

You can not create displays as long as the DB connections TERMPAR1:GENPER (terminal 1), and TERMPAR2:GENPER (terminal2) etc., are set to 1. See Section 5.4 End Generation. You can set GENPER=1 from the Advant Station 120.

Maximum Capacity

In Section 3.5 Number of Displays and Variables there is a table which shows the number of strings and variables you may use. Do also check the maximum number of displays and variables the Controller is dimensioned for. Use the command DIMDB from the Advant Station 120.

DUTDB Dump

The reason why it is impossible to add text or variables may be that you have loaded the dump with the command LOTDB and answered “yes” to the question “DO YOU WANT TO COMPRESS DATA BASE DUMP?”. All remaining memory for strings and variables has then been deleted.

When using LOTDB you get the question “REDIMENSION?”. REDIMENSION has the following function: A new dimensioning has to be bigger than the previous one. More space for the increase is added. The old (compressed) dimensioning is left untouched. Example:

- Previous dimensioning 40 displays.
- You have used “COMPRESS”, so the present dump is compressed.
- You change to 50 displays by using LOTDB with REDIMENSION.
- The result is that space corresponding to 10 new displays is added

NOTE

The new memory is not big enough for 50 uncompressed displays

If you want to return to uncompressed dimensioning, proceed as follows:

1. Take a source code dump of the displays. See Section 9.9.1 Dumping the Complete MV 320 Application.
2. Delete all displays in the system from the MasterView 320 terminal, dialog “Modify Display” $^{1)}$.
3. DUTDB
4. Make LOTDB with REDIMENSION to one display.
5. DUTDB
6. LOTDB with REDIMENSION to 50 displays
7. The total memory is now (compressed display 1) + 49 uncompressed displays.
8. Load source code dumps of TERMSTR, TERMREF, TERMDIS and TERMDYN.

1) A faster method to delete displays (point 2) is described on the next page:

1	Make DUDB of	149.1	TERMSTR1
		160.1	TERMREF1
		147.1	TERMDIS1
		148.1	TERMDYN1.
2	Make LODB in LOGFILE mode of the, a moment ago, dumped	149.1	TERMSTR1
		160.1	TERMREF1
		147.1	TERMDIS1
		148.1	TERMDYN1.

After LODB, there is only one instance in each file.

(Give the command “HELP DUDB”, “HELP LODB” from the Advant Station 100 Series Engineering Station for more information about these commands).

11.5 The Events do Not Reach The MasterView 320

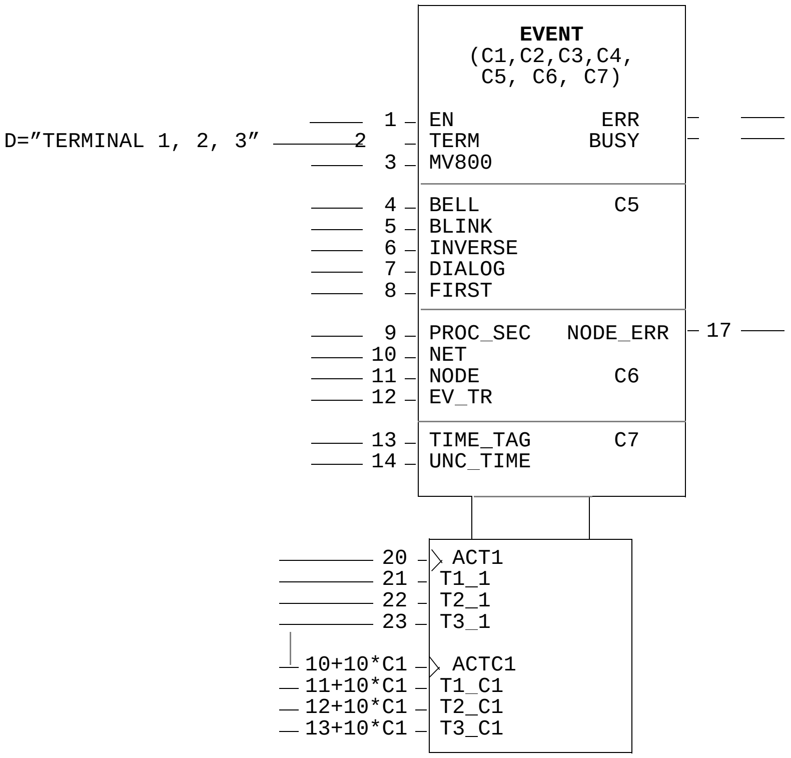


Figure 11-5. PC element EVENT

The connection “TERM” of the PC element EVENT indicates which MasterView 320 terminals the events should be sent to. It is important that all terminals are connected, otherwise no terminal will receive any events.

Instructions

- Do only send events to the terminals which are connected. Specify receiving terminals on the connection TERM of the PC element EVENT.
- You may configure for a terminal that has not yet been connected. You must then connect the pins 7-8 respectively 2-5-9 in the connector on the hardware CI531 (alternatively PM150). These are the same connections as in the regular cable, see Section 4.4.1 Connection Without a Modem.

Event Queues

When troubleshooting, it may help having knowledge about the event queues.

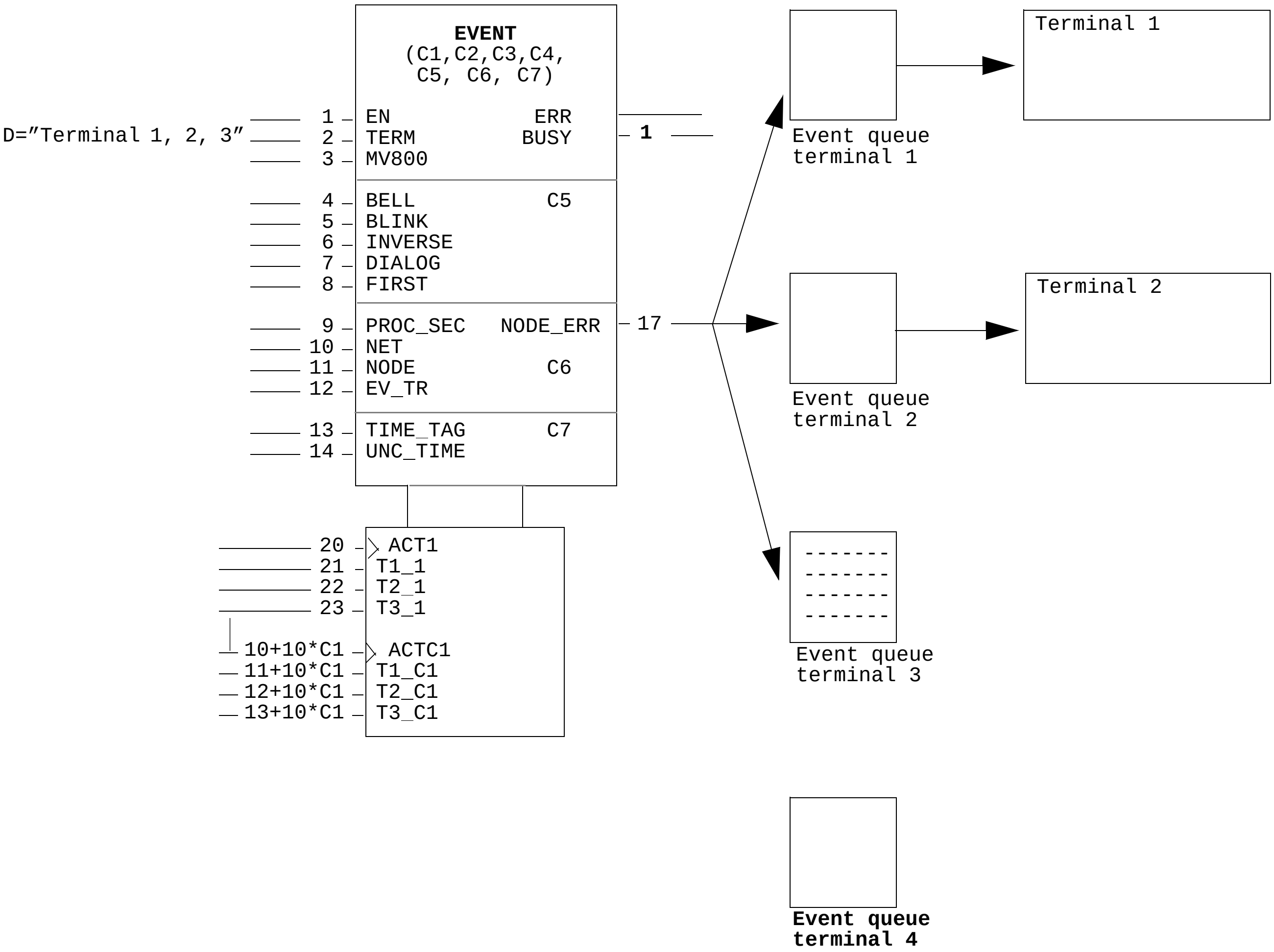


Figure 11-6. Event queues, terminal 3 is not connected

Between the PC element EVENT and the hardware CI531 (alternatively PM150), there is an event queue for each terminal (see Figure 11-6). Each queue has space for 10 events, which is normally sufficient. However, if one terminal is not connected, its event queue becomes full.

The PC element EVENT checks that the events reach the event queue. If one queue is full, EVENT resends the events to that very queue. EVENT then sets the output BUSY. If the queue continues being full, the element EVENT stops detecting new events until the queue is started to being emptied (i.e. until the corresponding terminal is connected).

11.6 Repairing Destroyed Displays

The displays in MasterView 320 might be destroyed, e.g.:

- Information in the display is missing.
- You are not able to select the display, or modify variables in the display.

The cause may be:

- An erroneous program has caused an error in the RAM contents.
- The system has been manipulated in an abnormal way during the configuration.
- Someone has tried to modify the displays from the Advant Station 120, e.g. by the commands MDB, DDB, or DINS.

NOTE

The MasterView 320 displays must be created from the MasterView 320 terminal (or by source code).

11.6.1 Repairing Destroyed Displays, Method 1

You can repair a destroyed display by using source code. Proceed as follows (Example: you are working at terminal 3):

1. Stop the MasterView 320 terminal by setting DB element input TERM 3:ACT to 0.
2. Identify, by using Advant Station 100 Series Engineering Station, the DB elements which belong to the erroneous display. See Section 9.9.2 Dumping a Single MasterView 320 Display.
3. Investigate the DB elements:
   a. If there are problems with a static string, investigate the TERMREF element, and the TERMSTR element which corresponds to the string.
   b. If there are problems with a dynamic variable, investigate the TERMDIS element, and the TERMYN element which corresponds to the variable.
   c. If there are problems with a boolean variable which has string representation, investigate also the TERMGEN1 element.
4. If you find an obvious error, make a source code dump of the faulty element. Do not correct the error immediately with the Advant Station 100 Series Engineering Station commands MDB, DDB, DINS, MPRO, etc.
5. Correct the error in the source code.
6. Load the source code. In some cases it is necessary to delete the corresponding DB elements in the controller. You will notice when you are trying to load the source code. Use DDB.
7. Activate the MasterView 320 terminal by setting DB element input TERM_3:ACT to 1.

11.6.2 Repairing Destroyed Displays, Method 2

Errors are not always visible at the DB element inputs. If you can not find the error, make a source code dump of the whole display. Proceed as follows (Example: you are working at terminal 3):

1. Source code dump the display. See Section 9.9 Source Code Handling.
2. Investigate the source code according to Method 1, point 3. If you find errors, correct them.
3. Delete the erroneous display:
   a. Set the DB element input TERMPAR3:GENPER to 1 from the Advant Station 100 Series Engineering Station.
   b. Use the MasterView 320 terminal, dialog “MODIFY DISPLAY”, to delete the display.
4. Stop the MasterView 320 terminal by setting DB element TERM_3:ACT to 0.
5. Load the source code. In some cases it is necessary to delete the corresponding DB elements in the controller. You will notice when you are trying to load the source code. Use DDB.
6. Activate the MasterView 320 terminal by setting DB element input TERM_3:ACT to 1.

11.7 DUDB-LODB Dump

When you make a DUDB dump, include dynamic data. Otherwise the displays of the MasterView 320 will be erased.

3BSE 003 836R0001 Rev A

March, 1997